# فلسفة الذرية المنطقية


تأليف

برتراند رسل

ترجمة وتقديم

دكتور / ماهر عبد القادر محمد


١٩٩٨


دار المعرفة الجامعية

٤٠ ش سوتير - الأزاريطة ت ٤٨٣٠١٦٣

٣٨١ ش قنال السويس - الشاطبي ٥٩٧٢٣١٤٦٠٠

# مقدّمة

برتراند أرثر وليام رسِّل Bertrand Arthur Wiliam Russell من أعلام الفكر الفلسفي المعاصر، والرائد الأول الذي أحدث ثورة علمية هائلة في رياضيات القرن العشرين، وأحد دعاة السلام القلائل في عصر سادته الحروب والتمزقات الدولية.

ولد رسل في ١٨ مايو ١٨٧٢ بالقرب من مقاطعة Trelleck بانجلترا لأسرة رسِّل العريقة التي لعبت دوراً هاماً في تاريخ انجلترا السياسي منذ أوائل القرن السادس عشر.

ورغم أنه فقد أبواه، وهو بعد في الثالثة من عمره[١]، إلا أن جده وجدته سعيا معاً لإسقاط وصية أبواه اللذان عهدا فيها إلى رجل عرف بحرية الفكر ليكون وصيا عليه. ولذلك نشأ في دار جده مما كان له أبلغ الأثر في توجيه حياته ومبادئه وأفكاره فيما بعد.

كانت حياة رسِّل في دار جده مليئة بالأحداث الحافلة التي أثرت في حياته، فتعاليم المنزل كانت تحتم عليه أن يستيقظ في ساعات الصباح المبكر ـ منذ نعومة أظافره ـ ليعزف على البيانو من السابعة والنصف وحتى الثامنة

(١) Russell, B., 'My Mental Development,' ed. in Schilpp, P. A., The Philosophy of Bertrand Russell, London, vol. v, 1946, p. 3.

صباحاً، ثم يبدأ بعد ذلك الصلاة العائلية التي كانت تعقد في الثامنة صباحاً[1].

ولم تكن التعاليم الصارمة ـ التي يخضع لها نظام المنزل ـ تسمح له بتحقيق رغباته أو مطالبه، أو حتى الاختلاط بغيره من الأطفال الذين هم في مثل عمره، فعاش طفولة منعزلة إلى حد كبير. ولم يشعر بأحاسيس من هم في مثل عمره من الأطفال، وهذا ما جعله يصف المناخ العام للأسرة التي كان يعيش بينها ويخضع لتعاليمها بقوله: «لقد أكرهت على الحياة في جو مريض ذاعت فيه مبادىء أخلاقية غير سليمة ذيوعاً يشل الذكاء»[2].

ومما لا شك فيه أن فترات طفولته كانت مدعاة قوية لأن يثير الحديث حولها في أكثر من مناسبة، فتناولها بالحديث في مقاله «تطورى العقلي» الذي صدر به «أرثر شليب» المؤلف الذي أعده عن رسل عام ١٩٤٤، حيث استعرض رسل في هذه المقالة مراحل حياته المختلفة، والعوامل الكبرى التي أثرت في تطوره العقلي والفلسفي. والمؤلف الذي أصدره رسل عام ١٩٥٦ بعنوان «صور من الذاكرة ومقالات أخرى» عرض أيضاً للتأثيرات الكبرى في حياته. وأخيراً أخرج سيرته الذاتية في ثلاث مجلدات تتناول ثلاث مراحل في حياته، الأولى من عام ١٨٨٢ ـ ١٩١٤، والثانية ١٩١٤ ـ ١٩٤٤، والثالثة ١٩٤٤ ـ ١٩٦٨.

لم يتلقى رسل تعليمه، فيما قبل ذهابه إلى جامعة كيمبردج، بالمدارس الحكومية، إن دار جده كانت مدرسته الأولى لأنها تنتمي إلى الطراز التقليدي في مبادىء التعليم الذي كان مألوفاً في أوروبا حتى القرن التاسع عشر. لقد اهتمت جدته رسل، بعد وفاة جده، بتربيته وتعليمه على أساس من المبادىء التي آمنت بها في صدر شبابها والتي ظلت تلازمها في كهولتها، فاستقدمت له

(١) Russell, B. , Portraits From Memory, ch. 1.

(٢) Ibid.

مربين ومربيات ألمانيات وسويسريات[1]، قمن على مراقبة شؤون حياته وتهذيبه، مما أثر في حياته تأثيراً شديداً.

فطريقة تربيته الأولى غرست فيه الطابع المثالي في النظر للأشياء من حوله، وقد ظل رسًل متأثراً بالمثالية Idealism حتى عام ١٨٩٨ إلى أن أقنعه «جورج مور» Moore بعدم كفاية موقفه المثالي[2]، وحوًل نظره بصفة نهائية من المثالية إلى التجريبية Empiricism. وقد يكون في قول رسًل ذاته بأن «أمره آل فيما بعد إلى مربين انجليز»[3] ما يبرر تحوله من المثالية إلى التجريبية.

ويمكننا أن نلاحظ في هذه الفترة عاملاً آخر قوي التأثير في حياة رسًل الفكرية، فقد اهتم رسًل اهتماماً كبيراً بالدين ووجود الله والحرية الإنسانية، فيما بين الرابعة عشر والخامسة عشر، وكان يشرف على تعليمه حينذاك معلم متشكك استطاع أن يناقش معه المشكلات التي تدخل في هذا النطاق[4]، إلا أن أمر هذا المعلم بات معروفاً للأسرة التي كانت تقدس المعتقدات الدينية وتحافظ على التعاليم المقدسة وتحرم النقاش في مثل هذه المسائل، فطرد المعلم من عمله حتى لا يفسد عقلية رسًل.

ومع هذا فإننا نجد رسًل في فترة من فترات حياته يشك في القيم السائدة والعقائد الموروثة والدين، ويعلن تخليه عن المسيحية بصفة نهائية في عام ١٩٢٧ في مقال كتبه بعنوان «لماذا لست مسيحياً»، ومع هذا لم ينكر وجود الله على الإطلاق.

والمتبع لحياة رسًل يجد أن اتصاله بالمعلم المتشكك لم يكن السبب المباشر للنزعة الشكية Skepticism التي ظهرت لدى رسًل، بل يعد بمثابة همزة

(١) Russell, B. ,'My Mental Development' P. 7.

(٢) Weitz, M., 'Analysis and the Unity of Russell's Philosophy', PP. 58-59. ed- in 'Schilpp vol'

(٣) Russell, B., op.cit. P. 7.

(٤) Ibid, P. 7.

الوصل بين الماضي والحاضر، فقد أعلن والد رسّل في الحادية والعشرين من عمره أنه ليس مسيحياً ورفض أن يذهب إلى الكنيسة في يوم عيد الميلاد[1].

ومع كل هذه العوامل فقد مارست جدته نوعاً من التأثير العميق على حياته فبحكم «عقيدتها البروتستانتية كانت تؤمن بضرورة أن يكون للأفراد أنفسهم حق الحكم على الأشياء، بحيث يصبح لضمير الفرد سلطة عليا»[2] ، وقد أصبح هذا المبدأ، المثل الأعلى لفيلسوفنا طيلة حياته الفلسفية، فلم يتردد لحظة واحدة في رفض كل العقائد التي لا يقبلها عقله، مما جعله يتخذ مواقف محددة من الأحداث التي كانت تدور من حوله.

والحقيقة أن مواهب رسّل العقلية بدأت تظهر منذ الحادية عشر من عمره، فأخذ يتفحص مبادىء هندسة إقليدس بعد أن اكتشف الأساس الواهي للنسق الإقليدي الذي يبدأ ببديهيات لا بدّ من التسليم بها بدون برهان، ورغم ما اكتشفه في الهندسة الإقليدية من نقاط ضعف في المبادىء الأساسية، إلا أنه اكتشف في نفسه قدرات رياضية حفزته على متابعة دراسته للرياضيات حيث اتضح له أن اليقين الرياضي يمتاز بقوة ندر أن توجد في الفلسفة أو الدين[3]، ومن ثم فإن اهتمامه بدراسة الرياضيات في صدر شبابه جاء امتداداً طبيعياً لتلك الحقبة من حياته.

وفي الثامنة من عمره التحق رسّل بجامعة كيمبردج التي هيأت له من الظروف ما جعله يواكب حركة العلم، فالتقى بأصدقاء عمره وفكره أساتذة وطلاباً، تأثر بالكثيرين منهم في مبدأ الأمر وأثر فيهم بعد نضجه، فتبعه البعض في أرائه، وانفض عنه آخرون.

لقد التقى بالفيلسوف الرياضي هوايتهد Whitehead الذي رشحه

---

(١) Ibid, p. 3.

(٢) Ibid, P. 5.

(٣) Russell, B.. My Philosophical Development, P. 11

للقبول بالجامعة بعد اختبار اجتازه بنجاح. وقام هوايتهد بتقديمه إلى الزملاء الذين أصبحوا فيما بعد أصدقاء عمره[1]. كما التقى بالفيلسوف الهيجلي «ماكتجارت» Mctaggart الذي كان أعظم الزملاء أثراً في حياته، كما التقى «بجورج مور» و «تشالز سانجر» Charles Sanger الرياضي الموهوب.

وفي السنوات الأربع التي قضاها رسّل في كيمبردج، كرس الشطر الأكبر من دراسته الأكاديمية لدراسة الرياضيات. حيث دفعته رغبته الجامحة إلى بحث المسائل المتعلقة بأسس الرياضيات، اعتقاداً منه في إمكانية العثور على اليقين[2] ومع هذا لم يتحقق له ما كان يصبو إليه إلا بعد سنوات طويلة احتاجت منه جهداً شاقاً لأكثر من ربع قرن من الزمان.

وفي آخر سنوات دراسته بكيمبردج عكف على دراسة الفلسفة، وهنا دخل في صراع بين وجهتي النظر المثالية والتجريبية. لقد كان «سدجوك» Sidgwick و «ورد» Ward و «ستاوت» Stout من بين الأساتذة الذين قاموا بتدريس الفلسفة في كيمبردج. أما «سدجوك» فكان يمثل وجهة النظر الانجليزية التجريبية، على حين أن «وارد» جذب انتباهه إلى «كانط» ودراسته، في الوقت الذي مهد فيه «ستاوت» الطريق أمام رسّل لدراسة «المظهر والحقيقة» Appearance and Reality لبرادلي Bradley، وتعاون معه ماكتجارت في التأثير على رسّل حتى أصبح من أتباع هيجل Hegel. وفي عام ١٨٩٤ أنهى رسّل دراسته بكيمبردج.

وبعد أن خرج إلى الحياة العملية اشتغل بالسياسة، ولم يكن هذا بالأمر الجديد على أسرته، فقد احتل اسم أسرة رسّل مكان الصدارة في التاريخ السياسي لانجلترا منذ القرن السادس عشر. فجده الأكبر لورد «جون رسّل» ولد في الفترة التي قامت فيها الثورة الفرنسية، وتولى رئاسة الوزارة مرتين

(١) Russell, B., 'My Mental Development', P. 11.

(٢) Russelly, B., Portraits From Memory, Ch. 1.

وكان صديقاً شخصياً لمعظم مشاهير عصره الذين جمعت بينه وبينهم صلات عديدة، كما أن لورد «جون رسّل» هو الذي أصدر قانون الإصلاح في عام ١٨٣٢، ووضعه موضع التنفيذ، فوضع انجترا على أول الطريق نحو الديمقراطية الكاملة[١].

ومع أن الحياة الجامعية ظلت تستحوذ على اهتمام رسّل؛ إلا أن ما جرى عليه العرف في أسرته أن يُنظر للسياسة والاشتغال بها نظرة رفيعة، ومن ثم فإن التفكير في الاشتغال بغيرها يُعد بحق خيانة حقيقة لتاريخ أسرة. وهنا واجه رسّل صراعاً كبيراً في التوفيق بين رغباته في الاشتغال بالفلسفة والفكر، وإصرار الأسرة على انخراطه في السلك السياسي. وأخيراً لم يجد رسّل في نفسه الرغبة للاستمرار في السلك السياسي، فحسم الصراع وتخلى عن عمله في أواخر عام ١٨٩٤[٢]، وارتحل إلى ألمانيا ليدرس الاقتصاد ببرلين، ثم غادرها إلى أمريكا في عام ١٨٩٦ مع زوجته الأمريكية، حيث استقرا بها ثلاثة أشهر غادراها بعدها إلى انجلترا ليقيما معاً في مقاطعة ساسكس[٣] Sussex.

ولم يقف إرتحاله في تلك الفترة حائلاً أمام ولعه بالعمل الأكاديمي، فقد اهتم فيما بين السنوات ١٨٩٤ - ١٨٩٨ بأسس الهندسة التي كان قد انتهى إلى الشك في بديهياتها، وتقدم إلى الجامعة للحصول على درجة الزمالة برسالة عنوانها «محاولة في أسس الهندسة» عام ١٨٩٧، وأثنى هوايتهد ووارد على الرسالة ثناءً عظيماً.

لقد ظل رسّل من أتباع المثالية وتأثر ببرادلي وماكتجارت تأثيراً كبيراً، وهنا فإننا نلمح من بعيد اتصاله بالتراث الفلسفي الانجليزي. ذلك أن المثالية قد انتشرت في انجلترا إبان القرن السابع عشر، إلى أن جاء لوك وتصدى

---

(١) Ibid.

(٢) Russell, B., op. cit., p. 10.

(٣) Ibid, P. 11.

لانتشارها بإصدار كتابه الهام «مقاله في العقل الإنساني» عام ١٦٦٠، حيث وجد أنه لا يمكننا بناء أي نسق فلسفي إلا بالاستناد للتجربة والخبرة الحسية، فالنفس عنده «كاللوح الذي لم ينقش فيه شيء وأن التجربة هي التي تنقش فيها المعاني والمبادىء جميعاً»[1]. إلا أن المثالية عادت للظهور ثانية في القرن الثامن عشر، وهذا ما فرض على هيوم ضرورة التصدي لها بمذهبة الحسي التصوري في «بحث في الفهم الإنساني» حيث رد المعرفة إلى الإدراكات، تلك التي تتميز بأنها حسيّة، ومن هنا تصبح المعرفة انعكاساً للانطباعات الحسيّة. وفي القرن التاسع عشر، ذهب كولريدج إلى معارضة التجربة الحسيّة بالحدس Intuition مما أدى إلى الإشادة بدور العقل من حيث اعتبر «الفهم قوة استدلالية تركب ما تتلقاه من التجربة وتقف عند هذا الحد»[2] ، وفي هذا الاتجاه سار «كارليل» الذي بدأ دراسته بفلسفة هيوم وفلسفة الشكاك، وانتهى إلى أن الشك والنفي مرتبطان بالاستدلال العقلي، لا بالتجربة الحسيّة، على عكس ما ذهب التجريبيون. وتلك الحركة المثالية الأخيرة جاءت بتأثير كانط Kant، وهذا ما جعل «جون ستيوارت مل» Mill مدافعاً قوياً عن التجربة والاتجاه التجريبي الحسي في المعرفة خاصة في كتابه عن المنطق.

وفي أواخر القرن التاسع عشر عادت المثالية للظهور بقوة في فلسفات «جرين» و«برادلي» و«بوزانكيت»، فسيطرت المثالية الهيجلية على كتاباتهم، ومن ثم تعين على «رسِّل» و«مور» أن يتجها معاً للتصدي للمثالية، وتفنيد إدعاءاتها وتقويض بناءها، فأخرج «مور» مقاله «رفض المذهب المثالي» عام ١٩٠٣، وأصدر رسِّل «أصول الرياضيات» ١٩٠٣ ثم «مشكلات الفلسفة» ١٩١٢، بعد سلسلة من المقالات التي مهدت لظهوره؛ فماتت المثالية في انجلترا إلى الأبدّ، وعاد الفكر الانجليزي أدراجه تجريبياً بحتاً كما كان في سابق عهده.

---

(١) يوسف كرم، تاريخ الفلسفة الحديثة، الطبعة الرابعة، دار المعارف، الإسكندرية، ١٩٦٦ ص ١٤٤.
(٢) المرجع السابق، ص ٣٣٥.

والواقع أن رسّل منذ ثورته على المثالية ورفضه لها، تبنّى فلسفة الذرية المنطقية[1] Philosophy of Logical Atomism مستخدماً التحليل[2] Analysis كمنهج وبذا أصبح التحليل «هو العنصر الأساسي في فلسفته»[3] وقد فرضت عليه هذه الفلسفة ضرورة مراجعة أسس العلم والفلسفة في شتى الاتجاهات، فأصدر برنكيبيا ماتيماتيكا، فيما بين الأعوام ١٩١٠ - ١٩١٣، بالاشتراك مع هوايتهد، مما أحدث ثورة علمية هائلة في ميدان الرياضيات والمنطق. وخلال فترة أرغم على قضاءها بالسجن دوّن «مقدمة للفلسفة الرياضية» ١٩١٩، ثم اتجه إلى معالجة موضوعات الفلسفة من خلال العلم في «تحليل العقل» و«تحليل المادة»، وغيرها من المؤلفات الأخرى الهامة.

إذن الثورة التي قادها رسّل على الفكر المثالي تؤكد لنا الطابع الذي تميزت به فلسفته في كل مراحلها، فقد كان رسّل بحاجة لأن يتخذ من المنهج العلمي دعامة أساسية لفلسفته التحليلية Analytical Philosophy، فالفلسفة بالنسبة له نشاط وحركة دائمة، ومن خلال هذا النشاط يمكن للفلسفة أن تعكس لنا بمنظارها الخاص النتائج results التي تصل إليها العلوم التطبيقية، وذلك عن طريق محاولة إيجاد وسيلة ملائمة لمعالجة مشكلات العلم.

وإذا كان لنا أن نصف فلسفة رسّل بأنها ذات طابع علمي، فإن وصفنا هذا لفلسفته إنما ينبع من قوله بأنه يمكن للفلسفة أن تؤسس ذاتها على أساس من العلم بصورتين: فهي إما أن تؤكد نتائج العلم الأكثر عمومية وتحاول أن تضفي عليها طابعاً أكثر عمومية وجده، أو أن تدرس مناهج Methods العلم، وتبحث عن إمكانية تطبيقها بعد إدخال التعديلات الملائمة عليها والتي تناسب اهتماماتها، فما يمكن نقله من دائرة العلوم الخاصة إلى دائرة

---

(١) Russell, B., My Philosophical Development, P. 11.

(٢) Weitz, M., Op. Cit., P. 57

(٣) Ibid

الفلسفة إنما هو المناهج ذات الفائدة لا النتائج»[1].

هنا نجد أنفسنا على الفور أمام تساءل هام يفرض نفسه علينا، ما الذي يعنيه رسِّل بمناهج العلم التي يمكن أن تستخدمها الفلسفة؟ هل هي تلك المناهج التي يقول بها العلماء ويستخدمونها في مجال العلوم التجريبية مثل علوم الفيزياء والكيمياء التي تتمثل في التجربة والقياس الدقيق وصياغة الفروض؟.

الواقع أن رسِّل حين يتحدث عن مناهج العلم إنما يعني استخدام مناهج العلوم الصورية أي الرياضيات والمنطق. فقضايا الفلسفة ـ كما ينظر إليها ـ تتميز بكونها عامة general وقبلية apriori، ومعنى كونها عامة هو أنها لا تبحث في جزء خاص من الكون مكاني Spatial أو زماني Temporal؛ أي أن الفلسفة ليس بذات موضوع محدد يصبح مناطاً لدراستها. أما صفة القبلية التي تنسحب على قضايا الفلسفة فتكمن في أنه «قد يمكن البرهنة أو عدم البرهنة عليها بالبينة التجريبية empirical evidence»[2]، وقضايا المنطق وحدها هي القضايا الصادقة التي تتسم بالعمومية والقبلية.

ومن ناحية أخرى فإنه إذا ما نظرنا إلى فلسفة رسِّل وجدناه يستخدم منهجاً شكياً Skeptical لمعالجة المشاكل الفلسفية المطروحة أمام الفكر، ففي كتابه «مشكلات الفلسفة» (١٩١٢) يبدأ قضيته الأساسية بالتساؤل: هل هناك في هذا العالم أي معرفة يقينية لا يمكن لإنسان عاقل أن يشك فيها؟

لكننا نلاحظ أن رسِّل لا يستخدم الشك لغرض الشك ذاته، بل الشك لديه وسيلة منهجية منظمة بالمعنى الديكارتي، وأداه صالحة لمنهج التحليل المنطقي الذي يخضع له مذهبه العام.

واستخدام رسِّل لمنهج الشك يؤكد لنا مقدرته على امتحان الأسس التي

---

(١) Russell. B., op. cit., p. 11.

(٢) Weitz, M., Op. Cit. P. 52

تقوم عليها اعتقاداتنا، والتي من خلالها نتبين أن كثيراً من القضايا التقليدية لا يمكن البرهنة على صدقها[١]. ومن ثم فإن استخدامه للشك المنهجي يعني رفضه للشك المطلق الذي تنتفي معه إمكانية قيام أي معرفة[٢].

ويتضح لنا بعداً آخر من أبعاد المنهج العلمي، كما يفهمه رسل إذا فحصنا الفكر الأساسي لذريته المنطقية التي يعتبرها فلسفته الأصيلة.

إن النتائج التي كان يصل إليها دائماً، كان ينظر إليها على أنها تخضع للامتحان والتجربة، ولذا فهي ذات طبيعة مؤقتة، وهذا ما يقرره بوضوح في مقالته بعنوان «الذرية المنطقية» (١٩٢٤) بعد أن طرح تصوره النظري عن طبيعة العقل والمادة قائلاً: «إن الفروض التي انتهينا إليها تحتاج إلى تبسيط وتمحيص بطرق مختلفة حتى تلائم الحقائق العلمية، ومن ثم فإنها لم توضع كنظرية نهائية، بل كاقتراح لنوع الشيء الذي قد يكون صادقاً»[٣].

والخاصية الأخيرة من خصائص المنهج العلمي تتضح لنا من تأكيده على ضرورة توافر الطابع العلمي للفلسفة، ورفض أي محاولة يقوم بها الفلاسفة لبناء انساق فلسفية على غرار ما تذهب إليه الميتافيزيقا التقليدية، ومن ثم فإنه بدلاً من أن يتجه الفليسوف إلى بناء نسق فلسفي، عليه أن يعالج المشكلات الفلسفية الواحدة منها بعد الأخرى عن طريق منهج التحليل الفلسفي، وهو المنهج الذي تقوم عليه فلسفته الذرية المنطقية والذي قاده إلى اعتبار التقدم الذي أحرزه الفكر الذري المنطقي يساوي في حصيلته المميزات التي أحرزتها أفكار جاليليو في الفيزياء[٤].

---

(١) Russell., 'On Scientific Method in Philosophy,' ed. in Mysticism and Logic, New York. 1918, pp. 105- 106.

(٢) Ibid.

(٣) Russell. B.,
- (a) Our Knowledge of The External World, London, 1949, pp. 75- 77.
- (b) An Outline of Philosophy, London, 1961, PP. 43-54.
- (c) An Inquiry Into Meaning And Truth. Penguin. London, 1967 P. 14, P. 16.

(٤) Russell, B., Reply to Criticism' ed. in 'Schilpp -Vol', PP. 683-684.

وخلال حياته قام بزيارات متعددة لكثير من الدول من بينها روسيا والصين، فازداد قناعة بخطر الشيوعية على العالم، ومنذ الحرب العالمية الأولى نصب نفسه رسولاً للسلام وعدواً للحرب، وأخذ يناضل من أجل هذه القضية مدافعاً عن حق الشعوب في الحياة، فأسس مؤسسة السلام التي أدانت مجرمي حرب فيتنام واستخدام أسلحة الدمار ضد الشعوب. وقد توفي رسَّل في ثاني أيام شهر فبراير ١٩٧٠.

**مؤلفاته:**

**أولاً في ميدان الرياضيات:**

**1 — An Essay on The Foundations of Geometry (1896).**

**(مقال في أسس الهندسة)**

ويتناول في هذا الكتاب مشكلة الهندسة في علاقتها بالمنطق والرياضيات، ثم تاريخ النظريات القديمة في الهندسة، والنتائج التي ينتهي إليها بحثه لأسس الفلسفة.

**2 - - The Principles of Mathematics (1903) (أصول الرياضيات)**

ويتناول فيه المشكلات المتعلقة بأصول الرياضيات والمنطق الرياضي. ويعتبر الجزء الأول من هذا المؤلف من أهم أجزائه لأنه يتعرض لدراسة اللامعرفات في الرياضيات وتعريف الرياضيات البحتة، والمنطق الرياضي، والتمييز بين التضمن الصوري والتضمن المادي، وأسماء الأعلام، والدلالة، ونظرية الفصول ودوال القضايا والمتغيرات والعلاقات والمتناقضات. أما الأجزاء الأخرى فيغلب عليها الطابع الرياضي البحت لأنها متعلقة بدراسة مشكلاتِ تنتمي إلى نظرية العدد ونظريات الهندسة

**3 — The Theory of Implication (1909)** (نظرية التضمن)

وهي مقالة نشرت في المجلة الأمريكية للرياضيات [illegible] يدرس فيها أهمية فكرة التضمن. وفي هذه المقالة يعالج الأفكار الابتدائية والخصائص

**4 — Mathematical Logic As based on The Theory of Types (1908).**

**(المنطق الرياضي مستنداً إلى نظرية الأنماط).**

وهي مقالة نشرت أيضاً في المجلةالأمريكية للرياضيات، ويدرس فيها المتناقضات، وفكرتي كل وبعض، وتدرج الأنماط، وبديهية قابلية الرد، وقضايا المنطق الرياضي، والنظريات الأولية في الفصول والعلاقات، والدالات الوصفية

**5 — Principia Mathematica (1910 - 1913)** **(مبادىء الرياضيات)**

أو (برنكيبيا ماتيماتيكا) وهو في ثلاثة أجزاء وقد ألف هذا الكتاب بالاشتراك مع هوايتهد أمام الرياضيين في عصره. ويعتبر هذا المؤلف المرجع الأساسي لنظر ات المنطق الرياضي مثل نظرية حساب القضايا، ونظرية حساب المحمول، ونظرية الفصول ونظرية العلاقات ونظرية الأوصاف.

**6 — Introduction To Mathematical Philosophy (1919).**

**(مقدمة للفلسفة الرياضية)**

وقد دون رسًل هذا المؤلف أثناء فترة أرغم على قضائها في السجن لمناهضته الحرب - ويستعرض فيه رسًل نظريات المنطق الرياضي، ونظريات العدد، والمشكلات المتعلقة بأصول الرياضيات وأسسها.

**ثانياً: في الفلسفة**

**1 — A Critical Exposition of The Philosophy of Leibniz: With An Appendix of Leading Passages (1900).**

**(عرض نقدي لفلسفة ليبنتز).**

وفي هذا المؤلف يقدم رسًل أروع صورة لفلسفة ليبنتز التي شُغل بتدريسها في كيمبردج في بداية حياته.

2 — **Philosophical Essays (1910)** **(مقالات فلسفية)**

وفيه مجموعة مقالات، سبق لرسّل أن دونها مثل: عناصر الأخلاق (١٩٠٨)، عبادة رجل حر (١٩٠٣)، دراسة الرياضيات (١٩٠٧)، البراجماتية (١٩٠٩)، تصور وليم جيمس للصدق (١٩٠٨)، النظرية الواحدية في الصدق (١٩٠٦)، في طبيعة الصدق والكذب (١٩٠٦).

3 — **Knowledge by Acquaintance and Knowledge by Description (1911).**

**(المعرفة بالاتصال المباشر والمعرفة بالوصف).**

مقال رائع قرأه رسّل على الجمعية الأرسطية، وقد نشر هذا المقال بعد ذلك في مشكلات الفلسفة (١٩١٢)، ثم في المنطق والمعرفة (١٩٥٦).

4 — **The Philosophy of Bargson (1912)** **(فلسفة بيرجسـون)**

وفيه يناقش المظهر والحقيقة، ووجود المادة، وطبيعة المادة، والمثالية، والمعرفة بالاتصال المباشر والمعرفة بالوصف، والاستقراء، ومعرفتنا بالمبادىء العامة، وكيف يمكن أن تكون المعرفة ممكنة قبلياً، وعالم الكليات، ومعرفتنا بالكليات، والمعرفة الحسية، والصدق والكذب وحدود المعـرفة، ثم قيمـة الفلسفة.

5 — **The Problems of Philosophy (1912)** **(مشكلات الفلسـفة)**

وصدور هذا المؤلف أحدث دوياً هائـلاً في عالم الفلسفة والفكر، وكان له أثره الفعّال في القضاء على الفكر المثالي.

6 — **Our Knowledge of The External World (1914).**

**(معرفتنا بالعالم الخارجي)**

ويعتبر هذا المؤلف من المؤلفات الهامة التي يستفيد فيها رسّل من معرفته بالفيزياء في ميدان الفلسفة.

7 — **The Philosophy of Logical Atomism (1919).** (**فلسفة الذرية المنطقية**)

وهي مجموعة محاضرات نشرت في مجلة مونست، وهي التي نعرض بعض فصولها الهامة هنا مترجمة إلى العربية.

8 — **The Analysis of Mind (1921).** (**تحليل العقل**)

وهو من أهم كتاباته العلمية في ميدان الفلسفة.

9 — **The ABC of Atoms (1923).** (**ألف باء الذرات**)

10 — **Logical Atomism (1924).** (**الذرية المنطقية**)

مقال يشرح فيه أصول فلسفة الذرية المنطقية وكيف توصل إليها.

11 — **The ABC of Relativity (1625).** (**ألف باء النسبية**)

وهو من المؤلفات العلمية القليلة التي يتناول فيها الفلسفة من خلال نظرية النسبية.

12 — **The Analysis of Matter (1927).** (**تحليل المادة**)

13 — **An Outline of Philosophy (1927).** (**موجز الفلسفة**)

14 — **The Scientific Outlook (1941).** (**النظرة العلمية**)

15 — **An Inquiry into Meaning and Truth (1940).**

(**بحث في المعنى والصدق**)

16 — Human Knowledge (1948). (**المعرفة الإنسانية**)

وهذه المجموعة عن المؤلفات بالإضافة إلى العديد من المقالات العلمية الأخرى تدخل في صميم دراسة فلسفة العلوم في إطار فلسفة رسّل.

17 — A History of Western Philosophy (1945). (تاريخ الفلسفة الغربية)

أضف إلى كل هذه الدراسات والكتابات، مجالات الدراسة الأخرى

التي كتب فيها رسًل مثل السياسة والأخلاق وعلم النفس والتربية.

في استعراض شيق لمراحل تطور الفلسفة الانجليزية المعاصرة ذهب «كوانتون» [1] Quinton إلى تقنين مراحل ثلاث أساسية مر بها تطور الفكر الفلسفي في انجلترا منذ مطلع القرن الحالي: أما المرحلة الأولى فتتمثل في مذهب الواقعية Realism الذي قدمه رسًل ومور في السنوات الأولى من القرن الحالي، وينظر إلى هذه المرحلة على أنها رد الفعل المباشر للفلسفة المثالية في انجلترا متمثلة في مدرسة جرين Green وبرادلي. ويمثل هذه المرحلة أصدق تمثيل كتاب مشكلات الفلسفة، لرسًل ومقال جورج مور «بعض المشكلات الأساسية للفلسفة» وكلاهما دون قبل عام ١٩١٤ - رغم أن مقال مور لم ينشر إلا في عام ١٩٥٣. أما المرحلة الثانية فيمكن أن نطلق عليها «فلسفة التحليل المنطقي» Philosphy Logical Analysis، وهو الاسم الذي أطلقه رسًل، وهذه المرحلة تمثلها كتابات رسًل التي صدرت حتى عام ١٩٢٠ وكتاب «فتجنشتين» Wittgenstein «رسالة منطقية فلسفية» (١٩٢٢) Tractatus، وقد عرفت فلسفة هذه الحقبة «بالذرية المنطقية» Logical Atomism، وكان لها أبلغ الأثر في أفكار دائرة ڤيينا، ثم الوضعية المنطقية Logical Positivism. والمرحلة الثالثة والأخيرة هي التي تمثلها «فلسفة اللغة» Philosophy of Language التي ازدهرت منذ الحرب العالمية الثانية تحت تأثير كتابات مور وفتجنشتين ورسًل ورايل Ryle. هذا هو التقسيم الذي يقدمه لنا «كوانتون» لمراحل الفلسفة الانجليزية.

لكننا نختلف مع «كوانتون» في وضع التقسيم على هذا النحو، لأن رسًل ذاته يذكر أنه ابتداء من ١٨٩٩ بدأ يتبنى فلسفة الذرية المنطقية، وأنه

---

[1] Quinton, A.M., 'Contemporary British Philosophy' ed. in 'O'Connor (ed)', p. 631

يفضل أن يطلق على فلسفته بأسرها هذا المصطلح أفضل من وصفها بالواقعية. وقد أكد هذا المعنى في مقاله بعنوان الذرية المنطقية (١٩٢٤)، ثم في آخر كتاباته الفلسفية، تطورى الفلسفي (١٩٥٩)، يقول رسًل في «الذرية المنطقية: «وما أريد تأكيده يتمثل في أن منطقي ذرى، ولذا فإنني أفضل أن أصف فلسفتي بأنها ذرية منطقية، أفضل من وصفها بالواقعية»[١]. وقد يمكننا القول بأن رسًل شارك مور اتجاهه الواقعي، لكنه كان يهدف حقيقة إلى وضع أصول فلسفة الذرية المنطقية في هذه الفترة، وهذا ما يبدو لنا بوضوح في أكثر من موضع من كتابات رسًل. والسبب في هذا أن رسًل كانت لديه، على الأقل، ثلاث مبررات أساسية لاتجاهه الذري، وقد عرض لنا هذه المبررات متصلة بمنهج العلم الحديث، وهذا المنهج هو المنهج التحليلي Analytical Method. أما المبرر الأول فيشير إليه في الصفحات الأولى من مؤلفه «معرفتنا بالعالم الخارجي» حيث يؤكد أن الأفكار التي سيطرحها في هذا المؤلف «تبين طبيعة منهج التحليل المنطقي في الفلسفة وفعاليته وحدوده، على اعتبار أن هذا المنهج... يمكن أن يقدم لنا كل ما يمكن الحصول عليه من المعرفة العلمية الموضوعية»[٢]. وفي مؤلفة «تطوري الفلسفي» يشير رسًل إلى نوعين آخرين من المبررات، الأول منها يؤكد فيه أن استخدامه منهج التحليل في الفلسفة يتمثل في أن فلسفة كانط Kant وهيجل Hegel المثالية لم تشبع في نفسه الحاجة إلى اليقين، وقد اتضح له من المناقشات التي دارت مع مور أن الفلسفة المثالية ليست كافية وينبغي أن ترفض، ومنذ هذه اللحظة اعتقد رسًل في استحالة تقدم الفلسفة من خلال المثالية، ومن ثم ينبغي البحث عن منهج آخر غير منهج المثاليين يجعله نقطة بداية الفلسفة، وقد عثر على ضالّته المنشودة في منهج التحليل الذي به وحده يصبح التقدم ممكناً[٣]. ويضيف رسًل إلى هذا المبرر مبرراً آخر مستمد من العلوم الامبريقية والتجريبية التي أثبتت نتائجها جدارة

(١) Russell, B. 'Logical Atomism', ed. in, Logic and Knowledge, P. 323.

(٢) Russell, B., Our Knowledge of The External World, P. 7.

(٣) Russell, B., My Philosophical Development, P. 14.

المنهج الذي تستخدمه، ففي أقل من ثلاثة قرون من الزمان استطاعت العلوم الطبيعية أن تحرز تقدماً عظيماً، والدليل على ذلك الفيزياء الحديثة التي توصلت إلى إنتاج أعظم الكشوف العلمية بعد أن اعتمدت على منهج التحليل وأخضعت له العالم المادي، فالتحليل يزودنا بمعرفة لا يمكن الحصول عليها بطريق آخر(١) .

نستنتج من هذه المبررات أن رسًل أراد لفلسفته أن تكن «ذرية» الجوهر «تحليلية» الطابع، خاصة وأن الصفة التحليلية في العلوم الفيزيائية ارتبطت بالصفة الذرية. أضف إلى هذا أن فكرة الذرية المنطقية في بدايتها ارتبطت بالرياضيات عند رسًل، وهذا ما يتضح من قوله: «فنوع الفلسفة التي أود الدفاع عنها، وأسميها ذرية منطقية، أحد الموضوعات التي فرضت نفسها عليَّ وأنا بصدد التفكير في فلسفة الرياضيات، رغم أنه من الصعوبة بمكان أن أحدد بدقة مدى العلاقة المنطقية بينهما»(٢). ونحن نعلم أن اهتمام رسًل بالرياضيات سابق على اهتمامه بالفلسفة؛ كما أن الرياضيات، من وجهة نظرة، تستخدم منهج التحليل كمنهج أساسي. فكأن رسل وفق كل هذه المعاني يمثل في مرحلته الأولى فلسفة الذرية المنطقية التي تستخدم التحليل كأداة جيدة لها فعاليتها في فهم العالم من حولنا. وبذا تصبح المرحلة الثانية التي حددها «كوانتون» هي المرحلة الأولى والأصيلة في فكر رسًل، وهي الوصف الدقيق للفلسفة الانجليزية في هذه الفترة.

على أساس هذه النظرة حاول برتراند رسًل أن يضمن مفهومه للذرية المنطقية في جانبها التحليلي مجموعة المحاضرات التي ألقاها فيما بين عامي ١٩١٨ - ١٩١٩ والتي أطلق عليها فلسفة الذرية المنطقية. ويهمنا بادىء ذي بدء، أن نشير إلى أن رسًل كان على علم تام بآراء تلميذه فتجنشتين حول فكرة الذرية، لكنه يشير إلى أن الأفكار التي يقدمها في فلسفة الذرية المنطقية

(١) Ibid, PP. 229-230.

(٢) Russell, B., 'The Philosophy of Logical Atomism', in, Logic and Knowledge, P. 178. P.L. Atomism

إنما هي نظرته الخاصة باستقلال تام عن آراء فتجنشتين، وإنها تعبر عما يعتقد في هذا العالم.

وقد يعتقد بعض الباحثين أن رسِّل استمد فكرته عن الوقائع الذرية والقضايا الذرية من مناقشاته مع فتجنشتين، وأن فكر فتجنشتين متقدم على فكر رسِّل لأن الأول أخرج رسالته المنطقية الفلسفية، كنسق متكامل عن العالم الذري والقضايا الذرية؛ لكن هذا الاعتقاد ليس له ما يبرره؛ لأن رسِّل لم يلتقي بفتجنشتين ولم يسمع عنه على الأقل إلا بعد عام ١٩١١، ومن الثابت أن رسِّل وهوايتهد اشتركا معاً في تدوين «برنكيبيا ماتيماتيكا» Princi-pia Mathematica الذي صدر جزءه الأول عام ١٩١٠ وفي مقدمته يشير أصحاب البرنكيبيا إلى أن القضية الذرية Atomic Proposition هي ما تقابل الواقعة الذرية Atomic fact الموجودة في العالم الخارجي. فكأن رسِّل عرف الفكرة قبل اتصاله بفتجنشتين، ولكن ربما عمق رسِّل فكرته الميتافيزيقية عن الذرية المنطقية بعد لقائه بتلميذه فتجنشتين، وهذا ما نجده في «فلسفة الذرية المنطقية» التي تعرض جوانب متعددة لأفكار منطقية ولغوية وابستمولوجية وميتافيزيقية. فما هي إذن «فلسفة الذرية المنطقية»؟

# النص العربي للمحاضرات الأربعة الأولى من فلسفة الذرية المنطقية

١ ـ الوقائع والقضايا.
٢ ـ الجزئيات والمحمولات والعلاقات.
٣ ـ القضايا الذرّية والجزيئية.
٤ ـ القضايا والوقائع لأكثر من فعل واحد أو معتقد.

# الفَصل الأوّل

# الوَقائع وَالقَضَايا

أطلقت عنوان فلسفة الذرية المنطقية على مجموعة المحاضرات التي أبدأها الآن، وربما كان من الأفضل أن أبدأ بكلمة أو اثنتين عما أفهمه من هذه التسمية. إن نوع الفلسفة التي أود الدفاع عنها، وأسميها ذرية منطقية، هو أحد الموضوعات التي فرضت نفسها عليّ وأنا بصدد التفكير في فلسفة الرياضيات، رغم أنه من الصعوبة بمكان أن أحدد بدقة مدى العلاقة المنطقية بينهما. والموضوعات التي سيرد ذكرها في هذه المحاضرات تعبر عن آرائي بصفة أساسية، ولست أدعي أنها أكثر من ذلك.

وكما حاولت البرهنة في أصول الرياضيات، فإننا عندما نحلّل الرياضيات نردها بأسرها للمنطق، وهي ترتد للمنطق بالمعنى الصوري والدقيق. وسأحاول في هذه المحاضرات أن ألقي الضوء بإيجاز أكثر على المذهب المنطقي الذي يبدو لي كنتيجة لفلسفة الرياضيات - ليس منطقياً تماماً - ولكن بقدر ما يظهر لنا، بقدر ما نفكر ملياً: فعلى أساس نوع محدد من المذهب المنطقي ينشأ نوع خاص من الميتافيزيقا.

والمنطق الذي سأدافع عنه ذرّى، كمعارض للمنطق الواحدي لأولئك الذين اتبعوا هيجل قليلاً أو كثيراً. وحينما أقول إن المنطق الذي أدافع عنه ذرّي، أعني مشاركتي للفهم المشترك الشائع الاعتقاد في وجود أشياء كثيرة منفصلة، دون أن آخذ بعين الاعتبار الكثرة الظاهرة للعالم والمؤلفة لأوجه

الانقسامات غير الحقيقية للحقيقة المفردة غير المنقسمة، وينتج عن ذلك أن جانباً هاماً مما يجب أن نقوم به لتبرير نوع الفلسفة التي أدافع عنها يكمن في تبرير عملية التحليل. وغالباً ما يقال إن عملية التحليل إنما هي تزييف، لأنه عندما تحلل أي كُلٍ عياني معطى فإنك تقوم بتزييفه، وبالتالي فإن نتائج التحليل لن تكون صادقة، إلا أنني لا أقصد في صواب هذه الوجهة من النظر. وبطبيعة الحال فإنني لا أعمد أن أقول، ولا يقصد ذلك أحداً، إنك بعد أن أجريت التحليل تحتفظ بكل شيء كان لديك قبل إجراء التحليل، لأنك إذا فعلت ذلك فلن تصل إلى شيء في التحليل، كما وأنني لا أستهدف من وراء ذلك إجراء نوع من المقابلة بين الآراء التي لا أتفق معها، عن طريق إقامة الحجة ضدها، ولكنني بصورة أخرى سوف أعرض ما أعتقد في صدقة عن الموضوع، وسوف أمهد الطريق أمام الآراء التي أدافع عنها لتجيء نتيجة لازمة ولا يمكن اجتنابها عن المعطيات المطلقة التي لا يمكن إنكارها. وحينما أتحدث عن معطيات لا يمكن إنكارها،فإنه لا يجب النظر إليها كمرادف للمصطلح معطيات صادقة، لأن الحد لا يمكن إنكاره، سيكولوجي؛ بينما الحد صادق، ليس كذلك. وعندما أقول إن شيئاً ما لا يمكن إنكاره، فإنني أعتقد أنه ليس من نوع الأشياء التي يمكن لأي شخص أن ينكرها، ولا ينتج عن ذلك أنه صادق رغم أنه يستتبع ذلك أننا جميعاً سنفكر أنه صادق. وهذا يكون قريباً من الصدق الذي يبدو لنا أننا قادرين على أن نحصل عليه. وحينما نأخذ في الاعتبار نوعاً ما من نظرية المعرفة، فإنك ترتبط قليلاً أو كثيراً بموضوعيه معينة لا يمكن اجتنابها، لأنك ببساطة لا تكون معنياً بما هو صادق عن العالم، بقدر ما تكون معنياً بالتساؤل «ما الذي يمكن أن أعرفه عن العالم؟» إنك دائماً في حاجة أن تبدأ أي نوع من الحجة من شيء ما يبدو لك أنه صادق، فإن بدا لك أنه صادق فليس هناك شيئاً تفعله أكثر من ذلك. إنك لن تستطيع الذهاب بعيداً عن نفسك وتعتبر ما إذا كانت الأشياء التي تبدو لك تجريدياً على أنها صادقة فهي صادقة. قد تفعل ذلك في حالة خاصة حيثما يكون أحد معتقداتك قد تغير بالنسبة لمعتقداتك الأخرى.

إن السبب الذي من أجله أطلق على مذهبي ذرّيةَ منطقية، هو أن الذرات التي أريد الوصول إليها في نهاية التحليل إنما هي ذرات منطقية، وليست ذرات فيزيائية، وبعضها سيكون ما أطلق عليه جزئيات، وهذه الأشياء دقيقة جداً مثل اللون أو الصوت والأشياء اللحظية أو البرهية، وبعضها الآخر سيكون محمولات، أو علاقات، وهكذا. إذن النقطة الأساسية هي أن الذرة التي أبغي الوصول إليها هي ذرة التحليل المنطقي، وليست ذرة التحليل الفيزيائي.

والحقيقة الغريبة في الفلسفة هي أن المعطيات التي نبدأ بها ولا يمكن إنكارها دائماً ما تكون فجة، ومبعثاً للغموض. يمكنك أن تقول على سبيل المثال «يوجد عدد من الناس في هذه الحجرة في هذه اللحظة». من الواضح أن هذا القول، بمعنى ما، لا يمكن إنكاره، ولكن عندما تحاول أن تحدد ماذا تكون هذه الغرفة، وما الذي يجب أن يكون للشخص في حجرة، وكيف ستتمكن من تمييز شخص من آخر، وما إلى ذلك، ستجد أن معظم ما ذهبت إليه «فجاً»، وحقيقة ستجد نفسك قاصراً عن معرفة ما كنت تعنيه. إن الحقيقة الأكيدة هي أن كل شيء تَثَبّت منه حقيقة، وتأكدت منه، لا تعرف بنوع ما معناه، وفي اللحظة التي تصل فيها إلى جملة محددة سوف لا تكون متأكداً ما إذا كان صادقاً أو كاذباً، أو متيقن منه على الأقل. إن عملية التفلسف في رأيي تتألف أساساً من الانتقال من الأشياء الواضحة، والفجة، والمشكوك فيها، والتي نشعر بأننا متأكدين منها تماماً باعتبارها موجزة وواضحة ومحددة، عن طريق التفكير والتحليل حيث نجدها متضمنة في الشيء الفج الذي بدأنا منه، ويمكن القول بأن الصدق الحقيقي للشيء الفج نوعاً من السراب. وأود أن أكرس محاضرة بأسرها عن تصور الفجاجة إذا أسعفنا الوقت. وإنني أعتقد أن الفجاجة على درجة كبيرة من الأهمية في نظرية المعرفة أكثر من أن تحكم عليها من خلال كتابات معظم الناس. إن كل شيء يظل فجاً لدرجة معينة لا تدركها إلا عندما تحاول أن تجعله دقيقاً ومحدداً، وكل

شيء دقيق لا يختلف عن كل شيء نفكر فيه عادة، فلن تستطيع من أول وهلة أن تفترض أن هذا ما نعنيه حقيقة عندما قلنا ما تفكر فيه.

وعندما تنتقل من الفج إلى الدقيق باستخدام منهج التحليل والتأمل الذي أتحدث عنه، فإنك تكون محاطاً دائماً بمجموعة معينة من الخطأ. فإذا بدأت بالعبارة التي تقول يوجد كذا وكذا من الرجال في هذه الغرفة، وحاولت بعدئذ أن أجعل تلك العبارة دقيقة، فإنني حينئذ سوف أرتكب مخاطرات عديدة، وسوف لن تكون العبارة التي أكونها صادقة على الإطلاق. كذلك فإنك لن تستطيع بسهولة أو ببساطة أن تنتقل من تلك الأشياء الفجة التي لا يمكن إنكارها إلى أشياء دقيقة تظل تبقي على نقطة البدء التي لا يمكن إنكارها، كما وقد تكون القضايا الدقيقة التي تصل إليها مقدمات منطقية للنسق الذي ستقيمه على تلك الأسس، إلا أنها ليست مقدمات لنظرية المعرفة. وفي الحقيقة، من الأهمية بمكان أن تدرك الفرق بين المقدمات التي اشتققت منها معرفتك، والمقدمات التي لو كانت لديك فعلاً معرفة كاملة بها تستنبطها، وهذان أمران مختلفان تماماً فنوع المقدمة التي يضعها المنطقي اعلم سوف لن تكون من نوع ذلك الشيء الذي عرف أولاً أو عرف بسهولة: إنها ستكون قضية ذات قوة استنباطية وقدرة على الإقناع، والدقة سوف تجعلها مختلفة تماماً عن المقدمة الفعلية التي بدأت منها معرفتك. وعندما تتحدث عن مقدمة لنظرية المعرفة، فإنك لا تتحدث عن شيء موضوعي، وإنما عن شيء ما يختلف من شخص لآخر، ذلك لأن مقدمات نظرية المعرفة لشخص ما سوف لا تكون ذاتها بالنسبة لشخص آخر. ويوجد اتجاه كبير لدى مدرسة واسعة الانتشار لافتراض أنه عندما تكون بصدد محاولة التفلسف عما تعرفه، فإنه يتحتم عليك أن ترجع بمقدماتك إلى الوراء كثيراً حتى تصل إلى ذلك الجزء الفج وغير المضبوط، إلى جانب النقطة التي تكون أنت ذاتك عندها، إلى الوراء تماماً مثل الطفل أو القرد، وإلى أي شيء يبدو لك مهما كان أنك تعرف ـ إلا أن السيكولوجي يتعرف عليه تماماً كما لو كان محصلة الفكر

السابق والتحليل والتفكير في ذلك الجزء منك ـ إنه لا يمكن أن يأخذ حقيقة كمقدمة في معرفتك الخاصة. أقول تلك نظرية قائمة وواسعة الانتشار في مقابل وجهة النظر التحليلية التي أود إثباتها. ويبدو لي أنه عندما يكون موضوعك قائماً، ليس ببساطة أن تدرس تاريخ أو تطور العقل، ولكن لتأكيد طبيعة العالم، فلن تكون لديك رغبة في أن تذهب إلى الوراء أكثر من أنك نفسك فعلاً، لن تكون بك حاجة لأن تعود إلى فجاجة الطفل أو القرد، لأنك ستجد هذا كاف تماماً وصعب لأنه شيد بفجاجتك أصلاً، لكن قد يواجه المرء بأحد تلك الصعوبات التي ترد بشكل ثابت في الفلسفة. فحينما ينشأ لديك اتجاهان متعصبان يصطرعان تبطل الأحكام أنه يوجد نمط من العقل يضع في اعتباره ما يسمى بالتجربة البدائية ويرى أنها أفضل مرشد إلى الحكمة بدلاً من خبرة المفكرين، كما ويوجد نمط آخر من العقل يأخذ بوجهة النظر المعارضة تماماً. عند تلك النقطة لا أرى أي نوع من الحكم. إنه من الواضح تماماً أن الشخص ذو التعليم العالي يرى ويسمع وبشعر ويفعل كل شيء بطريقة مختلفة تماماً عن طفل صغير أو حيوان، ومن ثم فطريقته هذه في خبرة العالم وفي التفكير حول العالم أكثر تخيلية من طريقة الإنسان ذو الخبرة البدائية. إن الأشياء التي علينا أن نأخذها كمقدمات في أي نوع من التحليل هو تلك الأشياء التي يبدو لنا أنه لا يمكن إنكارها، وبصفة عامة، فإنني أعتقد أن المنهج الذي استخدمه ديكارت صحيح: يجب أن تشك في الأشياء وتستبقى فقط تلك التي لا يمكن أن تشك فيها بسبب وضوحها وتميّزها لا بسبب تأكدك منها أو بسبب عدم تعرضها للخطأ، ذلك لأنه لا يوجد منهج كائن ما كان يمكن أن يعصمك من احتمالات الخطأ. والرغبة في الضمان التام واحدة من تلك الفخوخ التي نسقط فيها دائماً، ولذا فإنني أعتقد أن منهج ديكارت في مجملة أحد تلك المناهج التي تصلح لأن تكون نقطة بدء.

لذلك فإنني أقترح دائماً إحالة أي حكم إلى المعطيات، ورغم أن هذا الأمر قد يكون مبعثاً للسخف، إلا أن مهارة فلسفية مطلوبة سوف تتكون في

مجموعها من القدرة على التفكير والتحليل، وبالتحليل والتفكير ذاتهما.

إن ما ذكرته سلفاً يعد بمثابة مقدمة.

إن الحقيقة الثابتة التي أريد أن أجذب انتباهك إليها ـ وأمل أن تتفق معي على أن تلك الأشياء التي أطلق عليها حقائق ثابتة واضحة لدرجة أنك تضحك من مجرد ذكرها هي أن العالم يحوي وقائع، تلك التي تكون ما هي عليه أيما اخترناها لنفكر فيها، وأنه توجد أيضاً اعتقادات تشير إلى وقائع، وبالرجوع إلى الوقائع تكون هذه الاعتقادات إما صادقة أو كاذبة. وسأحاول أولاً وقبل كل شيء أن أقدم لك شرحاً أولياً لما أعنيه «بالواقعة». عندما أتحدث عن «واقعة» ـ ولست أقترح محاولة لتعريف مضبوط، بل شرح يجعلك تعرف ما الذي أتحدث عنه ـ أعني نوع ذلك الشيء الذي يجعل قضية ما صادقة أو كاذبة. إذا قلت «إنها تمطر» فما أقوله يكون صادقاً تحت شرط معين من المناخ،كما أن هذا القول يصبح كاذباً في ظل شروط أخرى من المناخ، فحالة المناخ التي تجعل عبارتي صادقة (أو كاذبة حسب الحالة) هو ما سوف أسميه واقعة. وإذا قلت «سقراط ميت» فإن عبارتي ستكون صادقة بسبب تواترات فسيولوجية معينة حدثت في أثينا منذ زمن بعيد. وإذا قلنا إن «الجاذبية يتناسب عكسياً مع مربع المسافة» فإن واقعة كونية معينة تجعل عبارتي صادقة. وإذا قلت «اثنين واثنين أربعة» فإن واقعة حسابية معينة هي التي تجعل عبارتي صادقة. ومن الناحية الأخرى إذا قلت أن «سقراط حي» أو «الجاذبية تتناسب مع المسافة» أو «اثنين واثنين خمسة» فإن ذات الوقائع التي جعلت عباراتي السابقة صادقة تبين لنا بجلاء أن العبارات الجديدة كاذبة.

وأريدك أن تدرك أنه عندما أتحدث عن واقعة ما فإنني لا أعني شيء جزيء موجود مثل سقراط، أو المطر أو الشمس، ذلك لأن سقراط في حد ذاته لا يجعل أي عبارة صادقة أو كاذبة، ومن ثم فيجب عليك ألا تفترض أن سقراط ذاته هو ما يضفي الصدق على العبارة «سقراط وجد» لأن هذا خطأ بكل تأكيد، ويرجع الخطأ هنا إلى نوع من الخلط سأحاول شرحه في

المحاضرة السادسة من هذه الدروس حينما أتطرق للعناية بمفهوم «الوجود».
فسقراط ذاته، أو أي شيء جزئي بذاته، لا يجعل أي قضية صادقة أو كاذبة.
«سقراط ميت» و«سقراط حي»، كلاهما عبارتان عن سقراط، إحداهما صادقة والأخرى كاذبة. إن ما أطلقت عليه «واقعة» هو من نوع ذلك الشيء الذي تعبر عنه بجملة كاملة، وليس باسم مفرد مثل سقراط. فعندما تأتي كلمة مفردة لتعبر عن واقعة، مثل «نار» أو «ذئب»، فإن هذا يرجع دائماً إلى نص غير مصرح به، والتعبير الكامل للواقعة سيبقى دائماً متضمناً في جملة. وعلى سبيل المثال، فإننا نعبر عن واقعة حينما نقول إن شيئاً معيناً له خاصية معينة، أو أن له علاقة معينة بشيء آخر، ولكن الشيء الذي له الخاصية أو العلاقة ليس هو ما أسميه واقعة.

ومن الأهمية بمكان أن نلاحظ أن الوقائع تنتمي إلى «العالم الموضوعي»، فهي لا تشيد بأفكارنا أو معتقداتنا إلا في حالات خاصة. وهذا واحد من نوع الأشياء التي سأعرضها على أنها واضحة بذاتها، ولكن على المرء أن يحذر بالطبع من اللحظة التي يقرأ فيها أي فلسفة على الإطلاق، فإلى أي مدى يمكن أن نقول مثل هذه العبارة لأنه من ذلك يمكن أن تنتهي إلى نوع الموقف الذي تريده. وأول شيء أريد تأكيده هو أن العالم الخارجي ـ يمكنك القول العالم الذي تهدف إلى معرفته ـ ليس موصوفاً تماماً بكمية من الجزئيات، ويجب أيضاً أن نضع في الحسبان تلك الأشياء التي أسميها «وقائع»، والتي هي من نوع تلك التي تعبر عنها بجملة، وإن هذه تماماً مثل الكراسي والمناضد الجزئية، إنها جزء من العالم الحقيقي. وباستثناء علم النفس فإن معظم عباراتنا ليس المقصود بها تقريباً أن تعبر عن حالة عقلنا، رغم أن هذا هو كل ما نجحوا فيه، إنهم يقصدون التعبير عن وقائع ستكون عن العالم الخارجي (إلا حينما تكون وقائع سيكولوجية) إن مثل تلك الوقائع متضمنة في حديثنا بطريقة متساوية حينما نتحدث صدقاً وحينما نتحدث كذباً، فعندما نتكلم كذباً تكون واقعة موضوعية تلك التي تجعل ما نقوله كاذباً، كما تكون واقعة موضوعية

تلك التي تجعل ما نقوله صادقاً حينما نتحدث صدقاً.

إنه توجد أنواع كثيرة من الوقائع المختلفة، وفي محاضرات مقبلة سوف نعني بقدر معين من تصنيف الوقائع. وسوف أشير لبعض أنواع الوقائع لنبدأ بها، ولذلك فإنه ليس لك أن تتخيل أن الوقائع كلها متشابهة. إنه توجد «وقائع جزئية» مثل «هذا أبيض»، كما وتوجد وقائع عامة، مثل «كل الرجال فانون». وبالطبع فإن التمييز بين الوقائع الجزئية والوقائع العامة واحد من التمييزات الهامة جداً. ومن الخطأ الجسيم أن تفترض أنه باستطاعتك وصف العالم تماماً عن طريق الوقائع الجزئية وحدها. افترض أنك نجحت في ترتيب كل الوقائع الجزئية الموجودة في الكون على أساس زمني وأنه لا توجد بعد أي واقعة جزئية مفردة من أي نوع في أي مكان لم تضعها في ترتيبها الزمني، فإنك سوف تبقى غير حاصل على وصف كامل للكون إذا لم تضيف قائلاً: «هذه الوقائع التي رتبتها على أساس زمني هي كل الوقائع الجزئية الموجودة هنالك». ومن ثم فيجب ألا تأمل في وصف العالم بدون الاستعانة بالوقائع العامة تماماً مثل الوقائع الجزئية. وهناك تمييز آخر قد يكون أقل صعوبة بين «الوقائع الموجبة» و«الوقائع السالبة» مثل «سقراط كان حياً» واقعة موجبة، و«سقراط ليس حي»، يمكنك أن تقول ، واقعة سالبة. لكن من الصعوبة بمكان أن نجعل هذا التمييز دقيقاً. إذن توجد وقائع تنصب على الأشياء الجزئية أو الكيفيات الجزئية أو العلاقات، وبعيداً عن هذه الوقائع فإن الوقائع العامة عمومية تامة من ذلك النوع الذي لديك في المنطق، حيث لا يوجد ذكر لأي مكون مهما كان عن «العالم الواقعي»، ولا ذكر لأي شيء جزئي أو كيفية جزئية، أو علاقة جزئية. وحقيقة يمكنك القول إنه ليس ثمة ذكر لأي شيء. إن من أدق الخصائص المميزة للقضايا المنطقية إنها لا تذكر شيئاً. ومثل تلك القضية تكون: «إذا كان فصلاً جزء من آخر، فإن الحد الذي هو عضواً في ذلك الفصل، هو أيضاً عضو في الفصل الآخر». إن الكلمات التي جاءت في هذه العبارة بأسرها هي من قبيل «القضية المنطقية البحتة»، وهي حقاً كلمات تنتمي للإعراب، إنها تقريباً كلمات ذات صورة تعبيرية أو رابطية، لا تذكر

أي تكون جزئي للقضية التي وردت فيها. وبالطبع فإن هذا شيء يتطلب برهاناً، ولست أعرضه كشيء جلي بذاته. إذن توجد وقائع خاصة بخصائص الأشياء المفردة، ووقائع خاصة بالعلاقات بين شيئين، وثلاثة أشياء، وهكذا، وأي عدد من التصنيفات المختلفة لبعض الوقائع في العالم، تلك التي تكون هامة لأغراض مختلفة.

ومن الواضح أنه لا توجد ثنائية للوقائع الصادقة والكاذبة، وإنما توجد لدينا فقط وقائع. وبطبيعة الحال فإنه من الخطأ أن نقول إن كل الوقائع صادقة لأن صادق وكاذب متلازمين، ويمكنك فقط أن تقول عن شيء أنه كان صادقاً إذا كان من نوع ذلك الشيء الذي قد يكون صادقاً، والواقعة لا يمكن أن تكون إما صادقة أو كاذبة. وهذا يفضي بنا إلى التساؤل عن العبارات أو القضايا أو الأحكام. فكل تلك الأشياء هي التي تكون حاصلة على ثنائية الصدق والكذب. أما فيما يتعلق بأغراض المنطق، رغم أنني لا أعتقد ذلك بالنسبة لأغراض نظرية المعرفة، فإنه من الطبيعي أن نركّز على القضية باعتبارها الشيء الذي سيكون وسيلتنا النموذجية لثنائية الصدق والكذب. ويمكننا القول أن القضية هي جملة تثبت شيئاً ما، وليست بجملة تستفهم أو تأمر، أو تعبّر عن رغبة، وقد تكون أيضاً من نوع الجمل المسبوقة بكلمة That، مثلاً «هذا السقراط حي»، أو أن «اثنين واثنين أربعة» أو أن «اثنين واثنين خمسة»، فأي شيء من هذا النوع سيكون قضية.

والقضيةهي رمز فحسب، إنها رمز مركب، بمعنى أن لها أجزاء وهذه الأجزاء هي أيضاً رموز: والرمز يعرف بأنه مركب حينما تكون له أجزاء هي في حد ذاتها رموز. إن الجملة تحوي عديداً من الكلمات، الكلمات المتعددة هي ذاتها رموز، ومن ثم فإن الجملة المكونة لتلك الكلمات هي أيضاً رمز مركب بهذا المعنى. إنه يوجد الشيء الكثير والهام بالنسبة للفلسفة في نظرية الرمزية، أكثر مما كنت أعتقد. وما أعتقده تقريباً هو أن تلك الأهمية بأسرها سالبة، أعني أن الأهمية تكمن في الحقيقة القائلة بأنه إن لم تكن تشعر

بأهمية الرمز ، وتعي علاقة الرمز بما يرمز له، فستجد أنك تنسب للشيء خواص ليست له وإنما هي للرمز.وقد يحدث هذا في الدراسات الأكثر تجريداً مثل المنطق الفلسفي، ذلك لأن موضوع الدراسة المفترض أنك تفكر فيه صعب للغاية لدرجة أن أي شخص لم يحاول التفكير فيه من قبل يعتقد أنك لم تفكر فيه مرة واحدة خلال ستة أشهر لمدة نصف دقيقة. وتظل بقية الوقت تفكر في الرموز لأنها ملموسة، ولكن الشيء الذي افترضت أن يكون مناط تفكيرك صعب للغاية وغالباً فإن المرء لم يرتب للتفكير فيه.والفيلسوف الجيد بحق هو الذي يفكر في الأمر مرة واحدة لمدة دقيقة خلال ستةأشهر، وهو ما لا يفعله الفيلسوف السيء. وهذا يبين ما لنظرية الرمزية من أهمية خاصة، لأنه بطريقة أو بأخرى قد تخطىء خواص الرمزية وتجعلها خواصاً للشيء. إلا أن للرمزية جوانب أخرى هامة أيضاً. فتوجد أنواع مختلفة من الرموز، وأنواع مختلفة للعلاقة بين الرمز وما يرمز إليه. ونتيجة لعدم إدراك هذا الأمر تنشأ أغاليط هامة جداً. ونوع المتناقضات الذي سأعني بالإشارة إليها في محاضرة متأخرة في علاقتها بالأنماط إنما ينشأ من الأخطاء في الرمزية، أو بصورة أدق، من وضع رمز ما في المكان الذي ينبغي أن يوضع فيه رمز آخر. وبعض المفاهيم مثل فكرة الوجود أو الواقع الخارجي التي ظن أنها أساسية ومطلقة في الفلسفة، أعتقد أنها نشأت من أخطاء الرمزية، وكلمتي الوجود والواقع الخارجي تعبران عن القدر الهائل من المناقشات التي دارت في الفلسفة. لقد وجدت نظريةعن كل قضية تكون حقيقة وصف للواقع ككل وهكذا، وهذه المفاهيم في مجموعها عن الحقيقة والوجود لعبت دوراً بارزاً في الفلسفة،وأعتقد الآن أن كل ما حدث في الفلسفةجاء نتيجة تامة للخلط في الرمزية، وعندما تزيل هذا الخلط ستجد عملياً أن كل شيء قيل عن الوجود ينطوي على خطأ، وهذا كل ما يمكنك أن تقوله عن الوجود.وسوف أهتم ببحث هذا في محاضرة متأخرة، لكن ما قدمناه مثالاً يكشف عن مدى أهمية الرمزية.

وربما كان من الأفضل أن أقول كلمة أو اثنتين عما أفهمه من الرمزية،

لأن بعض الناس يظنون أنك تعني الرموز الرياضية فحسب عندما تكون بصدد الحديث عن الرمزية. أنني استخدم الكلمة بمعنى ما يشمل كل اللغات من كل نوع، ومن ثم فإن كل كلمة هي رمز، وكذلك كل جملة وما إلى ذلك. وعندما أتحدث عن رمز فإنني أعني ببساطة شيئاً ما يعني شيئاً ما آخر. أما بالنسبة لما أعنيه بكلمة «معنى» فإنني لست مستعداً لأحدثك عنه الآن؛ ولكن بمرور الوقت سوف أحصي بدقة عدداً لا متناه للأشياء المختلفة التي قد يعنيها المعنى، ولكن لن أفعل ذلك الآن حتى لا تصبح المناقشة ثقيلة. إنني أظن أن مفهوم المعنى في معظمه سيكولوجي، ومن ثم فإنه ليس من الممكن أن نحصل على نظرية منطقية بحتة للمعنى أو للرمزية. وأظن أنه من مقتضيات الشرح الدقيق لما تعنيه بالرمز أن تضع في الحسبان مثل تلك الأشياء كمعرفة العلاقات المعرفية وربما التداعي أيضاً. وعلى أية حال فإنني مقتنع تماماً بأن نظرية الرمزية واستخدام الرمزية ليسا بالشيء الذي يمكنك شرحه في المنطق البحت دون أن تضع في الحسبان مختلف العلاقات الإدراكية التي تعرفها عن الأشياء.

أما فيما يتعلق بما يعنيه المرء بكلمة «معنى» فسوف أقدم بعض الإيضاحات، على سبيل المثال الكلمة «سقراط» يمكنك القول أنها تعني إنسان بالذات، والكلمة «فان» تعني كيفية معينة العبارة «سقراط فان» تعني واقعة معينة؛ ولكن هذه الأنواع الثلاثة للمعنى متميزة تماماً، وإذا ظننت أن الكلمة «معنى» لها نفس المعنى في كل من هذه الحالات الثلاث فسوف تتأتى إلى معظم التناقضات الميؤوس منها. ومن الهام جداً أن لا تفترض وجود شيء واحد مقصود بالمعنى، ومن ثم فإنه يوجد نوع واحد من العلاقة للرمز بالنسبة لما يرمز إليه. كذلك فإن الاسم يعتبر رمزاً تاماً نستخدمه للإشارة إلى شخص ما، كما وأن العبارة (أو القضية) هي الرمز التام للواقعة.

وثنائية الصدق والكذب تنسب للمعتقد أو الجملة، وهذا ما لا تكتسبه الواقعة. ودائماً يتضمن المعتقد أو الجملة قضية، فأنت تقول إن شخصاً يعتقد

في أن كذا وكذا هو الحالة. وأن شخصا يعتقد أن «سقراط ميت» فإن ما يعتقده هو قضية في مقابل هذا الاعتقاد، وبالنسبة للأغراض الصورية فإنه من الملائم أن نأخذ في الاعتبار القضية على أنها الشيء الأساسي الحاصل على ثنائية الصدق والكذب، وإنه من المهم جداً أن ندرك مثل تلك الأشياء، والتي هي على سبيل المثال مشابه للقول بأن القضايا ليست أسماء الوقائع، وقد يبدو لك هذا بوضوح بمجرد ما نشير إليك به، إلا أنني حقيقة لم أدرك هذا إلا بعد أن أشار عليّ به تلميذي السابق فتجنشتين.

إن هذا الأمر يبدو لك بوضوح وجلاء تام بمجرد ما تفكر فيه، فالقضية ليست اسم لواقعة، إنه توجد لديك قضيتان تناظر كل منهما واقعة، افترض أن الواقعة هي «سقراط ميت» توجد لديك هنا قضيتان، «سقراط ميت» و«سقراط لم يمت»،وهاتان القضيتان تناظران نفس الواقعة، فهناك واقعة واحدة في العالم تلك التي تجعل قضية صادقة والأخرى كاذبة، وليس هذا بالأمر العرضي، لأنه يوضح كيف أن علاقة قضية بواقعة مختلفة في مجموعها عن علاقة الاسم بالشيء المسمى. فلكل واقعة توجد قضيتين، واحدة صادقة وواحدة كاذبة، ولا يوجد شيء في طبيعة الرمز يبين لنا أيهما تكون صادقة وأيهما تكون كاذبة، لأنه أذا كان ذلك الشيء موجوداً لاستطعت أن تؤكد الصدق عن العالم بامتحان القضايا دون النظر من حولك.

وكما ترى فإن توجد علاقتان مختلفتان يجب أن تكونا لقضية ما بالنسبة للواقعة. الأولى هي العلاقة التي نسمّيها صادق بالنسبة للواقعة، والأخرى هي التي نسميها كاذب بالنسبة للواقعة، وهاتان علاقتان أساسيتان ومتساويتان، بينما في حالة الإسم توجد فقط علاقة واحدة تلك التي يمكن أن تكون لها تسمية. فالاسم يمكن أن يسمى جزئي، أو إذا لم يكن كذلك، فإنه ليس اسم على الإطلاق، وإنما يكون مجرد وصف إنه لن يكون اسم دون أن تكون له علاقة خاصة بتسمية شيء معين، لكن القضية لا تبدو قضية إذا كانت كاذبة، فللقضية طريقان فحسب، إما أن تكون صادقة أو كاذبة، وهذان

الطريقان يناظران الخاصة التي للاسم. وكما قد تكون الكلّمة اسم أو ليست باسم كأن تكون صوت بلا معنى، كذلك يكون القول الذي هو في ظاهرة قضية، قد يكون إما صادقاً أو كاذباً، أو خالياً من المعنى؛ إلا أن الصادق أو الكاذب معاً يقفان مقابل ما هو بلا معنى، وبطبيعة الحال فإن هذا يبين أن الخصائص الصورية المنطقية للقضايا مختلفة تماماً عن تلك التي للأسماء، وأن علاقات القضايا بالوقائع مختلفة تماماً،ومن ثم فالقضايا ليست أسماء لوقائع. ولا يجب عليك أن تذهب بعيداً مع الفكرة التي ترى أنه يمكنك أن تسمى الوقائع بأي طريقةأخرى، إنك لن تستطيع ذلك، ولن يمكنك تسميتها على الإطلاق. وبصورة دقيقة تماماً فإنه لن يمكنك تسمية واقعة ما. والشيء الوحيد الذي يمكنك أن تفعله هو أن تقررها أو تنكرها، أو ترغبها أو تريدها، أو تسأل عنها، لكن هذه الأشياء جميعاً تتضمن القضية ككل. إنك لن تستطيع أن تضع ما يجعل القضية كاذبة أو صادقة في موضع الموضوع المنطقي. إنه يمكنك فقط أن تتناول هذا الشيء كشيء تقرره أو تنكره، أو أي شيء من هذا القبيل، لكن ليس كشيء يمكن أن يُسمى.

# الفصل الثاني

# الجزئيات والمحمولات والعلاقات

أقترح أن أبدأ اليوم بتحليل الوقائع والقضايا، لأن الموضوع الرئيسي الذي يجب أن أبحثه هو شرعية التحليل، فإذا ما بدا المرء بما أسميه الذرية المنطقية فإن ذلك يعني أنه يعتقد فعلاً أن العالم يمكن أن يحلل إلى عدد من الأشياء المنفصلة والتي تربطها ببعضها البعض علاقات وخلافه، وأن نوع الحجج التي يستخدمها كثير من الفلاسفة ضد التحليل ليس لها ما يبررها.

وقد يفترض في فلسفة كالذرية المنطقية أن يبدأ المرء باكتشاف أنواع الذرات التي تتكون منها البناءات المنطقية، ولكنني لا أظن أن ذلك هو أول شيء تماماً، ولكنه بالأحرى أحد الأشياء الأولية، ويوجد سؤالين آخرين يجب أن يضعهما المرء في الاعتبار أحدهما على الأقل أوليٌّ، عليك أن تضع في اعتبارك:

١ ـ هل الأشياء التي تبدو ككيانات منطقية مركبة هي في الحقيقة مركبة؟.
٢ ـ هل هي في الحقيقة كيانات؟.

وحقيقة يمكننا أن نؤجل السؤال الثاني، لأنني لن أناقشه بشكل كامل إلا في محاضرتي الأخيرة. أما السؤال الأول والمتعلق بما إذا كانت هذه الكيانات مركبة حقيقة، فإنه أحد الأسئلة التي يجب علينا أن نناقشها في البداية. ولكن لا يمكن اعتبار أي من هذين السؤالين سؤال دقيق، ولست أدعي بأنه يمكن البدء بأسئلة دقيقة، ولا أظن أنه يمكنك أن تبدأ بأي شيء دقيق، ولكنك

تصل إلى هذه الدقة كلما تقدمت، ومع ذلك فكل من هذين السؤالين يمكن أن يكون له معنى دقيق، وكل منهما له أهمية.

ويأتي قبل كل ذلك سؤال آخر وهو: ماذا يجب أن نأخذ كأمثلة أولى للكيانات المركبة منطقياً؟ وهذا هو في الحقيقة أول سؤال يجب أن نبدأ به على الإطلاق. كذلك ما هو نوع الأشياء التي يجب أن نعتبرها مركبة للوهلة الأولى؟.

بالطبع، تبدو كل الأشياء العادية للحياة اليومية ككيانات مركبة، ومن أمثلة ذلك المناضد والكراسي والأرغفة والأسماك والأشخاص والقوى، فهذه كلها تبدو كيانات مركبة إذا نظرنا إليها من السطح. فكل الأشياء التي نخلع عليها في العادة أسماء أعلام هي كيانات مركبة مثل،سقراط وبيكادللي ورومانيا والليلة الثانية عشر،أو أي شيء آخر تحب أن تفكر فيه، وتطلق عليه اسم علم. فكل هذه الأشياء كما تبدو كيانات مركبة،وهي تبدو كأنساق مركبة مرتبطة بعضها ببعض في نوع من الوحدة، تلك الوحدة التي تؤدي إلى منحها اسماً واحداً. وأظن أن التفكير في هذا النوع من الوحدة الظاهرة هو الذي أدى بدرجة كبيرة إلى فلسفة الواحدية،وإلى الاقتراح القائل بأن العالم ككل عبارة عن كيان واحد مركب بالمعنى الذي كنت أعبر عنه الآن.

ولا أعتقد من جانبي في هذا النوع من الكيانات المركبة، وليست هذه هي الأشياء التي سوف آخذها لأول وهلة كأمثلة للكيانات المركبة، وسوف تبدو مبرراتي أكثر وضوحاً كلما استطردت، ولا يمكنني تقديمها كلها اليوم، ولكني يمكنني بشكل أو بآخر شرح ما أعني بطريقة مبدئية. أفترض ـ مثلاً ـ أنه كان يجب عليك أن تحلل واقعة خاصة عن «بيكادللي»، وافترض أنك قلت جملة عن بيكادللي مثل «بيكادللي شارع لطيف»، فإذا قمت بتحليل جملة من هذا النوع بشكل صحيح، فإنني أعتقد أنك سوف تجد أن الواقعة المناظرة لجملتك لا تحتوي على أي مكون يناظر كلمة بيكادللي التي سوف تشكل جزءاً من قضايا كثيرة هامة، ولكن الوقائع المناظرة لهذه القضايا لا تحتوي على أي

مكون مفرد مناظر لكلمة «بيكادللي»،سواء أكان هذا المكون بسيطاً أم مركباً. وبمعنى آخر، إذا أخذت اللغة كمرشد في تحليلك للواقعة المعبر عنها، فسوف تضللك جملة من هذا النوع، وسوف أشرح أسباب ذلك بالتفصيل في محاضرتي السادسة وجزئياً في محاضرتي السابعة أيضاً، ولكن يمكنني أن أقول بشكل مبدئي بعض الأشياء التي سوف تجعلك تفهم ما أعنيه. إننا إذا نظرنا بطريقة سطحية لكلمة «بيكادللي» لوجدنا أنها عبارة عن اسم جزء معين من سطح الأرض، وافترض أنك أردت تحديده فإنه يجب عليك أن تحدده كسلسلة من فصول الكيانات المادية، خاصة تلك التي احتلت ذلك الجزء من سطح الأرض في أوقات مختلفة، بحيث إنك سوف تجد أن المكانة المنطقية لبيكادللي مرتبطة بالمكانة المنطقية لتلك المتسلسلات والفصول، وإذا اعتبرت بيكادللي على أنه حقيقي فيجب أن تعتبر تلك السلسلة من الفصول حقيقة كذلك، وإذا ما أثبت أي مكانة ميتافيزيقية لبيكادللي، فإن عليك أن تثبتها لتلك الفصول أيضاً. وكما تعلم فإنني أعتقد أن المتسلسلات والفصول من طبيعة الأوهام المنطقية،ومن ثم فإنه إذا أمكن الإشارة إليها فإن بيكادللي سوف يتحول إلى وهم.

ويمكن تطبيق نفس الملاحظات على الأمثلة الأخرى؛ كرومانيا والليلة الثانية عشر وسقراط، ولكن ربما يثير سقراط بعض الأسئلة الخاصة، لأن السؤال عن مكونات شخص،تكتنفه صعوبات خاصة، ولكن من أجل طلب الحجة فقد يوحد المرء بين سقراط وسلسلة من تجاربه ، فيمكن أن نعتبره في حقيقته «سلسلة من الفصول»، لأن للإنسان تجارب كثيرة، وبذلك يمكن أن يكون مثل بيكادللي إلى حد كبير.

ويبدو أن هذا النوع من الاعتبارات سوف يأخذنا لأول وهلة من هذه الكيانات المركبة التي بدأنا بها،إلى أشياء أخرى أكثر صعوبة وأجدر بالانتباه التحليلي، وبصفة خاصة الوقائع. ولقد أوضحت في المرة السابقة ماذا أعني بكلمة واقعة،فهي ذلك الشيء الذي يجعل القضية صادقة أو كاذبة، أو هي

ذلك الشيء الذي يكون هنالك عندما تكون جملتك صادقة، ولا يكون هنالك عندما تكون جملتك كاذبة. وكما ذكرت في المرة السابقة، فإن الوقائع هي شيء ما يجب أن تضعه في الحسبان عندما تعطي تقريراً كاملاً عن العالم، ولا يمكنك أن تفعل ذلك بمجرد تعداد الأشياء الجزئية الموجودة به؛ولكن يجب عليك أيضاً أن تذكر العلاقات عن هذه الأشياء وصفاتها وخلافه، وكلها وقائع، لأن الوقائع بكل يقين تنتمي للعالم الموضوعي، وبالفعل تبدو الوقائع أكثر تركيباً ،وأقل قابلية للشرح عن أشياء مثل سقراط وورمانيا، ومع أنه يمكنك أن تشرح معنى كلمة سقراط،فإنك لن تعرف الصدق حول ما إذا كانت القضية «سقراط فان» تعبر عن واقعة. وربما لا تعرف بشكل قاطع ماذا تعنيه كلمة «سقراط»، ولكن من الواضح أنه يوجد معنى صحيح في القول بأن الواقعة المعبر عنها «سقراط فان» واقعة مركبة،فالأشياء الموجودة بالعالم لها صفات متعددة، ولها علاقات متعددة مع بعضها البعض، ومعنى أن لها هذه الصفات والعلاقات هو أنها وقائع، والأشياء بصفاتها وعلاقاتها ـ بشكل أو بآخر ـ عبارة عن مكونات للوقائع التي لها هذه الصفات أو العلاقات. ويمكن بطرق مختلفة اختزال تحليل الأشياء التي تبدو مركبة مثل التي بدأنا بها، إلى تحليل الوقائع التي تبدو خاصة بتلك الأشياء، وبذلك يمكن أن نقول إن التفكير في مشكلة التركيب يجب أن يبدأ بتحليل الوقائع لا بتحليل الأشياء التي يبدو أنها مركبة.

وتبدو الخاصية التركيبية لواقعة ما جليّة،إذا ما وضعنا في اعتبارنا أن القضية التي تقرر أية واقعة،تتكون من عدة كلمات،يمكن أن ترد كل كلمة منها في سياقات أخرى،وبالطبع فإنه يمكنك أن تجد أحياناً قضية ما معبراً عنها بكلمة واحدة، ولكنها إذا عُبر عنها بشكل تام لا بد وأن تحتوي على عدة كلمات. فالقضية «سقراط فان» يمكن أن تحل محلها القضية «أفلاطون فان»، أو القضية «سقراط آدمي».ففي الحالة الأولى نحن قد غيرنا الموضوع، أما في الثانية فقد غيرنا المحمول. ومن الواضح أن كل القضايا التي ترد بها كلمة

«سقراط» يجمع بينها شيء مشترك، وأيضاً كل القضايا التي ترد بها كلمة «آدمي» يجمع بينها شيء مشترك، وهو الشيء الذي لا يجمع بينهما وبين كل القضايا، ولكن فقط بينهما وبين تلك التي تكون عن «سقراط» أو عن «الفناء». وأظن أنه من الواضح أن الوقائع المناظرة للقضايا التي ترد بها كلمة «سقراط»،بها شيء مشترك مناظر للكلمة العامة «سقراط» التي ترد في القضايا. بحيث إنك تشعر منذ البداية بذلك الإحساس بالتركيب،ويمكنك في واقع الأمر،أن تحصل على شيء يمكن أن يكون مشتركاً بينها وبين وقائع أخرى. ومن أمثلة ذلك «سقراط آدمي» و«سقراط فان»،فكل منهما وقائع،وكل منهما متعلق بسقراط،على الرغم من أن سقراط لا يكوِّن تماماً أي من هاتين الواقعتين. ومن الواضح تماماً أنه يمكن بهذا المعنى تجزئة أي واقعة إلى عناصر مكوِّنة، بحيث يمكن تغيير مكوُّن منها دون أن تتغير المكونات الأخرى، ويمكن أن يرد مكون منها في وقائع أخرى معينة،بالرغم من أنها لا ترد في كل الوقائع الأخرى. وأريد كبداية أن أوضح أنه يمكن بشكل ما تحليل الوقائع. إنني لست معنياً بكل الصعوبات التي تواجه أي تحليل، ولكنني معنيٌ ، لأول وهلة، بمواجهة اعتراضات الفلاسفة الذين يظنون أنه ليس بمقدورك حقيقة إجراء التحليل على الإطلاق.

وبقدر الإمكان فإنني أحاول هذه المرة - كما فعلت في المرة السابقة - أن أبدأ بالحقائق الثابتة، وهدفي من ذلك أن تكون الأشياء التي أبدأ بها على درجة من الوضوح،لدرجة أنك تتعجب لم أضيع وقتي في بسطها، وهذا هو هدفي،لأن الفلسفة هي أن تبدأ بشيء على درجة كبيرة من البساطة،بحيث يبدو أنه لا يستحق التقرير،وأن تنتهي بشيء على درجة من المخالفية لدرجة أن أحداً لا يعتقد فيه.

وأحد العلامات الأولية على التركيب في القضايا كونها معبر عنها بكلمات متعددة. وأصل الآن إلى نقطة أخرى تطبق أولاً على القضايا،ثم يشتق تطبيقها على الوقائع. يمكنك أن تفهم قضية عندما تفهم الكلمات التي

تتكون منها هذه القضية حتى ولو لم تكن قد سمعت هذه القضية من قبل. ويبدو أن هذه أبسط خاصية، ولكنها الخاصية التي تشير إلى القضية كمركب وتميزها من الكلمات التي يكون معناها بسيطاً. فعندما تكون على علم بالكلمات والقواعد اللغوية والنحوية فإنك تفهم قضية بهذه اللغة حتى ولو لم تكن رأيتها من قبل. وعندما تقرأ جريدة مثلاً فإنك تصبح على دراية بعدة جمل جديدة عليك، ولكنك تفهمها في الحال على الرغم من كونها جديدة لأنك تفهم الكلمات التي تتألف منها، وخصيصة فهمك هذه لقضية عن طريق فهمك للكلمات المكونة لها، ليست موجودة في الكلمات المكونة عندما تعبّر هذه الكلمات عن شيء بسيط. خذ كلمة «أحمر» مثلاً، وافترض - كما يجب على المرء أن يفعل دائماً - أن «أحمر» تعبّر عن درجة معينة من اللون، فإنك سوف تقبل هذا الافتراض، ولكن لن يمكنك أن تتقدم عن ذلك، لأنه لن يمكنك فهم كلمة أحمر إلا إذا رأيت أشياء ذات لون أحمر، ولا توجد وسيلة أخرى غير ذلك. ولن تكون هناك فائدة من أن تتعلم لغات أو أن تبحث في قواميس لتعرف الشيء الأحمر، فلن يساعدك شيء من كل ذلك على فهم معنى كلمة «أحمر»، وبذلك يكون معنى الكلمة مختلفاً عن معنى «القضية». وبالطبع يمكنك أن تعطي تعريفاً لكلمة «أحمر»، وهنا نجد أنه من الأهمية بمكان أن نميِّز بين «التعريف» و«التحليل»، فالتحليل يكون ممكناً بالنسبة لما هو مركب فقط، ويعتمد دائماً على الاتصال المباشر بالموضوعات التي هي معاني لرموز بسيطة معينة. ومن الضروري أن نلاحظ أن المرء لا يعرِّف «شيئاً»، وإنما يعرِّف رمزاً، (والرمز البسيط هو رمز ليست عناصره رموز). وبهذا المعنى فإن الرمز البسيط يختلف تماماً عن الشيء البسيط، أما الأشياء التي يكون من المستحيل أن نرمز لها فيمكن أن نطلق عليها رموزاً بسيطة؛ بينما يمكن أن نطلق على الأشياء التي يمكن أن نرمز لها بمجموعة من الرموز كلمة «مركبة»، وهذا بالطبع تعريف أوليّ، وربما يكون دائرياً إلى حدٍّ ما، ولكن هذا لا يهمنا كثيراً في المرحلة الحالية.

لقد ذكرت أن كلمة «أحمر» لا يمكن أن تفهم إلا عن طريق رؤية أشياء

«حمراء»، وربما تعترض على هذا القول على أساس أنه يمكنك أن تعرِّف «أحمر»، مثلاً بأنه «اللون الذي له أطول موجة»، وهذا يعتبر تعريف «لأحمر»، ويمكن للمرء أن يفهم هذا التعريف حتى ولو لم يكن قد رأى أي شيء ذو لون أحمر، وذلك إذا كان يفهم النظرية الفيزيائية للألوان. ولكن ذلك في حقيقة الأمر لا يشكِّل المعنى الدقيق لكلمة «أحمر». إنك إذا أخذت قضية ما مثل «هذا أحمر» ووضعت بدلاً منها «هذا له اللون الذي له أطول موجة» فإنك تحصل على قضية مختلفة تماماً، لأن الشخص الذي لا يعلم شيئاً عن النظرية الفيزيائية للألوان يمكنه أن يفهم القضية «هذا أحمر» ويمكنه أن يعرف أنها صادقة، ولكن لن يمكنه أن يعرف أن «هذا له اللون الذي له أطول موجة». وبالعكس، لنفرض أنه يوجد شخص لا يمكن أن يرى اللون الأحمر، ولكنه يفهم النظرية الفيزيائية للألوان، ويمكنه أن يفهم القضية «هذا له اللون الذي له أطول موجة»، ولكنه ليس قادراً على أن يفهم القضية «هذا أحمر» كما يفهمها الشخص العادي غير المتعلم. إذن فمن الواضح أنك إذا عرَّفت «أحمر» باللون الذي له أطول موجة، فإنك لا تكون قد أعطيت المعنى الحقيقي للكلمة على الإطلاق، بل إنك ببساطة تعطي وصفاً صادقاً وهو شيء مختلف جداً، والقضايا التي تنتج مختلفة عن تلك التي تنتج عن القضايا التي ترد فيها كلمة «أحمر». وبهذا المعنى لا يمكن تعريف كلمة «أحمر»، إلا إذا أمكن أن يكون الوصف الصحيح «تعريفاً»، أما بمعنى التحليل فلا يمكنك أن تعرف كلمة «أحمر»، وهذا يوضِّح كيف يمكن للقواميس أن تؤدي عملاً، لأن القاموس يعرِّف كل كلمات اللغة بواسطة كلمات من اللغة ذاتها، ولهذا فمن الواضح تماماً أن القاموس متهم بالحلقة المفرغة عند نقطة ما، ولكنه يتغلب عليها عن طريق الأوصاف الصحيحة.

وبهذا المعنى أكون قد أوضحت بأي معنى يمكنني القول إن كلمة «أحمر» رمز بسيط، وأن القول «هذا أحمر» رمز مركب. فكلمةأحمر يمكن أن تفهم فقط عن طريق الاتصال المباشر بالشيء ذاته، بينما القول «الورود حمراء» يمكن أن تفهم إذا عرفت ما هو «أحمر» وما هي «الورود»، دون أن تكون قد

سمعت القول من قبل. وهذا دليل واضح لما هو مركب، إنه دليل الرمز المركب،وأيضاً دليل للشيء الذي يرمز له الرمز المركب، أي أن القضايا رموز مركبة،والوقائع التي تمثلها مركبة أيضاً.

ومسألة معاني الكلمات ككل مليئة بالتعقيدات والالتباسات في اللغة العادية فإذا ما استخدم شخص كلمة ما، فإنه لا يعني بها ما يعنيه شخص آخر إذا ما استخدم نفس الكلمة. وسوف يكون خطيراً حداً إذا قصد الناس نفس الأشياء بكلماتهم، وسوف يكون أي اتصال مستحيلاً وسوف تصبح اللغة أقل الأشياء جدوى، لأن المعنى الذي تربطه بكلماتك يجب أن يعتمد على طبيعة الأشياء التي أنت على اتصال مباشر بها، وحيث إن الناس المختلفين على اتصال مباشر بموضوعات مختلفة، فإنه لن يكون في استطاعتهم أن يتحدثوا مع بعضهم البعض إلا إذا ربطوا معاني متعددة بكلماتهم،ويجب علينا أن نتكلم عن المنطق فحسب، خذ مثلاً كلمة «بيكاديللي» فنحن الذين على اتصار مباشر بالبيكاديللي نربط بهذه الكلمة معنى مختلف إلى حدٌ كبير عن المعنى الذي يربطه بهذه الكلمة أي شخص لم يأت إلى لندن إطلاقاً، وإذا كنت من النوع الذي يسافر إلى مناطق أجنبية وتتكلم عن بيكاديللي، فإنك سوف تنقل إلى سامعيك قضايا مختلفة كليّة عن تلك التي توجد في ذهنك. إنهم سوف يعرفون بيكاديللي كشارع مهم في لندن، وربما يعرفون الكثير عنه ولكنهم لن يعرفوا الأشياء التي يعرفها المرء إذا مشى فيه. لأنك إذا كنت مصرّاً على استخدام لغة ليس فيها التباس بين الكلمات، فإنك سوف نكون غير قادر على أن تخبر الناس في بلدك ما قد رأيته في بلدان أجنبية. وسوف يكون من غير الملائم على الإطلاق أن تكون هناك لغة ليس بها أي التباس، ولهذا السبب حمداً لله أننا لا نملك هذه اللغة.

والتحليل ليس هو التعريف. إنه يمكنك أن تعرِّف حداً عن طريق الوصف الصحيح، ولكن هذا لا يعتبر تحليلاً. إن التحليل ـ لا التعريف ـ هو الذي نهتم به في اللحظة الراهنة، ولهذا فسوف أعود إلى مسألة التحليل.

يمكننا أن نضع التعريفات المؤقتة الآتية:

إن عناصر القضية هي الرموز التي يجب أن نفهمها لكي نفهم القضية.

إن عناصر الواقعة التي تجعل القضية صادقة أو كاذبة - وفقاً لما تكون عليه الحالة - هي «معاني» الرموز التي يجب أن نفهمها لكي نفهم القضية.

وهذا ليس صحيح تماماً، ولكنه سوف يمكِّنك من فهم ما أعني. وأحد الأسباب التي تجعل التعريفات السابقة غير صحيحة، أنها لا يمكن أن تطبق على كلمات مثل «أو» و«ليس» التي تعتبر أجزاء من القضية دون أن تناظر أي جزء من الواقعة. وهذا هو موضوع محاضرتي الثالثة.

وأسمِّي هذه التعريفات أولية، لأنها تبدأ من تركيب القضية - التي نقوم بتعريفها بطريقة سيكولوجية - وتنتهي بتركيب الواقعة؛ بينما من الواضح أنه يجب في أي إجراء صحيح منظّم أن تبدأ من تركيب الواقعة. ومن الواضح أيضاً أن تركيب الواقعة لا يمكن أن يكون مجرد شيء سيكولوجي. إذا كانت الواقعة الفلكية أن الأرض تدور حول الشمس، فإن تلك الواقعة تكون مركبة، ليس لأنك تعتقد أنها مركبة، ولكنها نوع من التركيب الموضوعي، ولهذا يجب على المرء في أي إجراء منظم أن يبدأ بتركيب العالم ويصل الى تركيب القضية. والسبب الوحيد في اتباع الطريق المخالف أنه يسهل على الفهم اقتناص الرموز في كل الموضوعات المجردة. ومع ذلك، فإنني أشكّ إذا ما كان في الإمكان على الإطلاق تعريف «التركيب» بهذا المعنى الموضوعي، حيث يبدأ المرء من تركيب الواقعة، ولن يمكنك أن تحلّل ماذا تعني بالتركيب بهذا المعنى. إنه يجب عليك أن تفهمها فقط، وأظنني أعتقد ذلك على الأقل. ولا يمكن للمرء أن يقول شيئاً في ذلك أكثر من إعطاء معايير مثل التي أعطيتها، ولهذا فإنه عندما لا يمكنك أن تحصل على تحليل تام لشيء ما، فإنه من الأفضل بوجه عام أن تدور حوله دون أن تقرر أنك قد أعطيت تعريفاً دقيقاً له.

وقد يمكن القول إن التركيب متعلق أساساً بالرموز، أو أنه سيكولوجي

أساساً ولا أعتقد أنه سوف يكون من الممكن أن أقرر أي من هذين الرأيين بشكل جدي، ولكنهما نوعاً من الآراء التي تخطر على بال المرء، أو الشيء الذي يجب أن يجربه المرء ليرى ما إذا كان ذو جدوى. ولكنني لا أعتقد أنهما سوف يكون لهما جدوى على الإطلاق. وعندما نأتي لأصول الرمزية التي سوف أتكلم عنها في محاضرتي السابعة فسوف أحاول إقناعك أنه في أي رمزية صحيحة منطقياً سوف يوجد نوع من الذاتية الأساسية للتركيب بين واقعة ما والرمز الذي يخصها، وأن تركيب الرمز يناظر تماماً تركيب الوقائع التي يرمز إليها. وكما قلت من قبل، فإنه من الواضح للفهم بشكل مباشر أيضاً أن الحقيقة القائلة بأن شيئين توجد بينهما علاقة معينة - على سبيل المثال هذا الشيء على يسار ذاك - هي نفسها مركبة من الناحية الموضوعية، وليس فهمها فقط هو المركب. إن الواقعة القائلة إن شيئين توجد بينهما علاقة معينة أو أي جملة من هذا النوع لها تركيبها الخاص بها، ولهذا فسوف أفترض في المستقبل أن العالم ذو تركيب موضوعي، وأن ذلك التركيب ينعكس عن طريق تركيب القضايا. ..

كنت أتحدث منذ لحظة مضت، عن المميزات العظيمة التي نحصل عليها من النقص المنطقي في اللغة، ومن واقع أن كل كلماتنا غامضة. وأقترح الآن أن نفكر في، كيف يمكن أن تكون اللغة كاملة منطقياً. يجب في أي لغة كاملة منطقياً، أن تناظر الكلمات مكونات الواقعة المناظرة لها تناظر واحد - بواحد -، فيما عدا كلمات مثل «أو» و«ليس» و«إذا» و«إذن»، التي لها وظيفة مختلفة. وسوف توجد في أي لغة كاملة منطقياً كلمة واحدة لا أكثر لكل شيء بسيط، وأي شيء غير بسيط سوف يعبر عنه بمجموعة من الكلمات، وهذه المجموعة، بالطبع، مشتقة من الكلمات التي تعبر عن الأشياء البسيطة الموجودة، بحيث تشير كلمة واحدة لكل مكوِّن بسيط. ولغة من هذا النوع سوف تكون تحليلية تماماً، وسوف توضح بنظرة واحدة البناء المنطقي للوقائع المقررة أو التي ننكرها. واللغة المعروضة في «برنكيبيا ماتيماتيكا» قصد منها أن تكون لغة من هذا النوع، فهي لغة ذات «نحو» فقط، دون مفردات من أي

نوع، وبصرف النظر عن صنف مفردات اللغة فإنني أعتقد أنها لغة لطيفة جداً. إن هذه اللغة تهدف إلى أن تكون ذلك النوع من اللغة الذي إذا أضيفت مفردات إليها سوف تصبح لغة كاملة منطقية. وبهذا المعنى فإن اللغات الفعلية ليست كاملة منطقياً، ولا يمكنها أن تكون كذلك إذا كان عليها أن تخدم الحياة اليومية. وإذا أمكن تشييد لغة كاملة منطقياً، فلن تكون مطولة بشكل لا يحتمل فقط، ولكن بالنسبة لمفرداتها سوف تكون خاصة بمتحدث واحد إلى حد كبير، بمعنى أن كل الأسماء التي سوف تستخدم سوف تكون خاصة بذلك المتحدث، ولا يمكن أن تدخل في لغة أي متحدث آخر، ولن يمكن لهذه اللغة أن تستخدم أسماء أعلام مثل سقراط أو بيكادللي أو رومانيا، للأسباب التي ذكرتها في بداية محاضراتي. لكل هذه الأسباب فسوف تجد أنها لغة غير مريحة بالفعل، وهذا هو أحد أسباب تدهور المنطق كعلم، لأن متطلبات المنطق تختلف اختلافاً كبيراً عن متطلبات الحياة اليومية،ونحن نحتاج للغة تصلح في كلتي الحالتين، ولكن للأسف فإن المنطق هو الذي يجب أن يتنحى، لا الحياة اليومية. ومع ذلك فسوف أفترض أننا قد كونا لغة كاملة منطقياً، وأننا سوف نستخدمها في بعض المناسبات، وسوف أعود ثانياً إلى المسألة التي قصدت أن أبدأ بها وهي تحليل الوقائع.

وأبسط أنواع الوقائع التي يمكن أن نتخيلها هي تلك التي تتكون من استحواذ شيء جزئي معين لكيفية ما، وهذه الوقائع مثل «هذا أبيض». وتلك الوقائع يجب أن تؤخذ بمعنى معين، ولست أريدكم أن تفكروا في قطعة الطباشير التي أمسكها، بل فيما ترونه عندما تنظرون إليها. فإذا قال شخص ما «هذا أبيض»،فإنها واقعة على درجة كبيرة من البساطة، والوقائع التي تليها في البساطة سوف تكون تلك الوقائع التي بها علاقة بين شيئين مثل «هذا على يسار ذلك»، ثم يلي ذلك الوقائع التي بها علاقة ثلاثية بين ثلاثة جزئيات (مثل الأمثلة التي يعيطيها «رويس» «أ يعطي ب إلى جـ»)، وعلى هذا فإنك تحصل على علاقات تتطلب على الأقل ثلاثة حدود، وهي التي نسميها علاقة

ثلاثية، وتلك التي تتطلب أربعة حدود ونسميها رباعية، وهكـذا. وبهذا تحصل على سلسلة هرمية لا نهائية للوقائع، وقائع يكون لديك فيها شيء وكيفية، وثلاثة أشياء وعلاقة، وأربعة أشياء وعلاقة وهكذا، وهذه السلسلة الهرمية كلها تشكل ما أسميه «الوقائع الذرية»، وهي أبسط أنواع الوقائع، ويمكنك أن تميز من بينها الوقائع الأبسط من الأخرى، لأن الوقائع التي تحتوي على كيفيةأبسط من الوقائع التي تحتوي على علاقة وهكذا، ولكن كل هذه الوقائع هي ما أطلق عليه الوقائع الذرية. أما القضايا التي تعبر عن تلك الوقائع فهي ما أسميه قضايا ذرية.

وفي كل واقعة ذرية يوجد مكوِّن واحد يعبر عنه بفعل (أو قد يعبر عنه بمحمول أو بصفة في حالة الكيفية). وهذا المكوِّن الواحد هو كيفية، أو علاقة ثنائية، أو علاقة ثلاثية، أو علاقة رباعية. ولأغـراض الحديث عن هـذه الأشياء فقد يبدو مريحاً أن نطلق على الكيفية «علاقة مونادية»، وسوف أفضل ذلك لأن هذا الوصف يدّخر قدراً كبيراً من الإسهاب.

وفي تلك الحالة يمكنك أن تقول بأن كل القضايا الذرية تقرر علاقات مختلفة والوقائع الذرية تحتوي، بالإضافة إلى العلاقة، على حدود العـلاقة ـ فتكون ذات حد واحد إذا كانت مونادية، وذات حدين إذا كانت ثنائية، وهكذا، وهذه الحدود التي ترد في الوقائع الذرية أعرفها «بالجزئيات».

الجزئيات = حدود العلاقات في الوقائع الذرية     تعريف

هذا هو تعريف الجزئيات، وأريد أن أؤكده، لأن تعريف الجزئي هو شيء منطقي بحت. والسؤال عما إذا كان هذا أو ذاك جزئي، إنما هو سؤال يمكن تقريره في حدود ذلك التعريف المنطقي. وحتى نفهم التعريف فليس من الضروري أن نعرف مقدماً أن «هذا جزئي» أو ذلك جزئي، بل يظل قيد البحث ما هي الجزئيات التي يمكنك أن تجدها في العالم، إذا كانت هناك ثمة جزئيات. والسؤال عن الجزئيات التي نجدها فعلاً في العالم الحقيقي إنما هو سؤال امبريقي بحت ولا يعني المنطقي، لأن المنطق ليس معنياً بتقديم أمثلة،

ولأن هذا السؤال يتعلق باختبارات القضية المنطقية التي لا تحتاج فيها لمعرفة أي شيء مهما كان عن العالم الحقيقي لكي تفهمها.

وإذا ما انتقلنا من الوقائع الذرية للقضايا الذرية فإن الكلمة التي تعبر عن علاقة مونادية أو عن كيفية تسمى «محمولاً»، أما الكلمة التي تعبر عن علاقة من أي نظام أعلى فسوف تسمى فعلاً، وقد تكون أحياناً فعل واحد، وأحياناً عبارة، وعلى حال فإن الفعل هو العصب الرئيسي للعلاقة. أما الكلمات التي ترد في القضايا الذرية وهي الكلمات التي ليست محمول أو فعل، فقد تسمى موضوعات القضية. وسوف يكون لدينا موضوعاً واحداً في القضية المونادية، وموضوعان في القضية الثنائية، وهكذا. والموضوعات في القضية سوف تكون هي الكلمات المعبرة عن حدود العلاقة المعبر عنها بالقضية.

والنوع الوحيد من الكلمات القادر على التعبير عن الجزئي نظرياً، هو اسم العلم، وموضوع أسماء الأعلام ككل على درجة من الخطورة.

أسماء الأعلام = كلمات الجزئيات تعريف

لقد وضعت هذا التعريف وفقاً لما تذهب إليه اللغة الدارجة، رغم أنني أعلم بوضوح عدم صحته. إنه من الصادق إنك إذا حاولت أن تفكر في كيف يمكنك الحديث عن الجزئيات، فإنك سوف ترى أنه لن يمكنك الحديث عن جزئي معين إلا عن طريق استخدام اسم العلم، ولن يمكنك أن تستخدم الكلمات العامة إلا على سبيل الوصف. كيف يمكن أن تعبر عن قضية ذرية باستخدام الكلمات؟ إن القضية الذرية هي أحد القضايا التي تذكر جزئيات فعلاً، وهي ليست مجرد وصف لهذه الجزئيات، بل تسمى الجزئيات فعلاً، فبالأسماء فقط يمكنك أن تسمى الجزئيات. ومن ثم فإنه يمكنك أن ترى بنفسك أن كل جزء آخر من الكلام، فيما عدا أسماء الأعلام، من الواضح تماماً أنه لا يمثل جزئي. فإذا وضعت نقطة على السبورة واسميتها

«جون» فسوف تدهش، وسوف تعرف ما أتحدث عنه. وإذا قلت إن «النقطة التي تقع على الجانب الأيمن بيضاء» هو قضية، وأن قولي «هذا أبيض»، قضية أخرى مختلفة تماماً. إن الوظيفة التي تقوم بها أداة الإشارة «هذا» بالنسبة لنا هنا، على اعتبار أننا نرى، وظيفة واضحة؛ لكن إذا أردت أن أتحدث عنها غداً، فيبدو من الملائم أن نطلق عليها «جون»، وليس هناك طريقة أخرى للحديث عن «هذا»، لأنه لن يمكنك حقيقة أن تذكر «هذا»، ذاتها إلّا عن طريق الإسم.

وما ينسحب على الأسماء في اللغة مثل «سقراط» و«أفلاطون» وما إلى ذلك،مقصود به أن ينجز هذه الوظيفة التي تعبر بها عن جزئيات، ونحن في حياتنا اليومية العادية نقبل كل أنواع الأشياء التي ليست من هذا القبيل على أنها جزئيات، والأسماء التي نستخدمها بطريقة مألوفة مثل «سقراط»؛إنما هي في واقع الأمر اختصارات لأوصاف،وليس هذا فحسب، وإنما ما تصفه ليس جزئيات بل أنساقاً مركبة لفصول أو مسلسلات. والاسم الذي معناه جزئي، بالمعنى المنطقي الضيق للكلمة، يمكن أن يطبق على الجزئي الذي يكون المتحدث على اتصال مباشر به، لأنه لن يمكنك أن تسمي أي شيء أنت لست على اتصال مباشر به. وتذكر أن آدم عندما سمى الحيوانات فقد عرضت عليه واحداً بعد الآخر، وأصبح على اتصال مباشر بها فسماها. ونحن لسنا على اتصال مباشر بسقراط، ومن ثم لا يمكننا أن نسميه. وحينما نستخدم الكلمة «سقراط»، فنحن حقيقة نستخدم وصفاً، ومن ثم يتعين على فكرنا أن يتخلى عن استخدام العبارات مثل «أستاذ أفلاطون» أو «الفيلسوف الذي تجرع الهملوك» أو «الشخص الذي قرر المناطقة أنه فان»، ولكننا بكل يقين لن نستطيع استخدام الاسم كاسم بالمعنى الدقيق للكلمة.

وهذا يمثل صعوبة شاقة بالنسبة لنا في الحصول على أي حالة لاسم على الإطلاق بالمعنى المنطقي الدقيق والتام للكلمة. والكلمات التي يمكن للمرء استخدامها كأسماء بالمعنى المنطقي للكلمة، هي كلمات مثل «هذا» أو «ذلك». فيمكن للمرء أن يستخدم «هذا» بوضع اسم يدل على جزئي يكون على

اتصال مباشر به في هذه اللحظة، فنحن نقول «هذا أبيض» فإذا سلمت بأن «هذا أبيض» يعني هذا الذي تراه فإنك تستخدم «هذا» كاسم علم. ولكن إذا حاولت أن تفهم القضية التي أُعبّر عنها الآن عندما أقول «هذا أبيض»، فلن يمكنك هذا. فإذا ما كنت تعني هذه القطعة من الطباشير كموضوع فيزيائي، فإنك تستخدم اسم العلم إذن. فاسم العلم الحقيقي لا يتأتى إلا عندما تستخدم «هذا» بشكل دقيق ليقوم مقام موضوع فعلى للحس. وبهذا المعنى فإن لاسم العلم خاصية غريبة،حاصة أنه يعني نفس الشيء الذي تحدثت عنه منذ لحظة، وهو لا يعني نفس الشيء بالنسبة للمتحدث أو السامع واسم العلم على هذا النحو غامض، ولكنه حقيقة اسم علم في كل الحالات، وهو الشيء الوحيد الذي يمكنني أن أفكر فيه دائماً بالمعنى المنطقي والدقيق الذي كنت أتحدث به عن اسم العلم. وأهمية أسماء الأعلام، بالمعنى الذي أتحدث عنه، إنما تكون بالمعنى المنطقي، لا بالمعنى الذي تستخدم به في الحياة اليومية. ويمكنك أن ترى ما أقوله حين تنظر في اللغة المنطقية المبسوطة في برنكيبيا ماتيماتيكا حيث لا ذكر لأي أسماء، لأننا في برنكيبيا لم نكن مهتمين بجزئيات خاصة، ولكن بالجزئيات بصفة عامة، إذا كان من الممكن أن أقول مثل هذه العبارة.

ومن بين أنواع الموضوعات التي يمكن أن تضعها في اعتبارك كاختراع عن العالم، تجد أن للجزئيات هذه الخاصية المميّزة، وهي أن كل واحد منها متقوّم بذاته تماماً،وهذا النوع من التقوم الذاتي هو الذي كان ينتمي عادة للجوهر، وفيما عدا ذلك فإن الجزئي عادة ما يدوم خلال فترة زمنية قصيرة كما تخبرنا خبرتنا. وهكذا يمكن القول بأن كل جزئي يوجد في العالم لا يعتمد على أي جزئي آخر بأي طريقة منطقية،فقد يحدث أن يستغرق كل جزئي الكون بأسره، والحقيقة الامبريقية تتمثل في أنه ليست هذه هي الحالة. وليس هناك سبب يبرر لم لا يتكون الكون من جزئي واحد فحسب، وهذه خاصية للجزئيات. وبطريقة مشابه فإنه لكي نفهم اسم يعبر عن جزئي،فإن الشيء

الوحيد الضروري هو أن تكون على اتصال مباشر بذلك الجزئي. فعندما تكون على اتصال مباشر بذلك الجزئي، يكون لديك فهم ملائم وكـامل للإسم، وبالتالي لا يتطلب الأمر أي معلومات أحرى. فالوقائع التي تصدق على ذلك الجزئي سوف تمكنك من الحصول على فهم كامل لمعنى الإسم، ولا يتطلب الأمر أكثر من ذلك.

# الفصل الثالث

# القضايا الذرية والجزيئية

لم أنهي تماماً الموضوعات التي قصدت إليها في محاضرتي الثانية، وهذا ما يتعين على أن أنجزه أولاً.

كنت أتحدث في نهاية محاضرتي السابقة عن موضع الجزئيات المتقوِّمة بذاتها، وكيف يكون لكل جزيء وجوده المستقل عن غيره،ولا يعتمد على أي شيء آخر للإمكانية المنطقية لوجوده،ومن ثم فقد عقدت مقارنة بين الجزئيات والتصور القديم للجوهر. فللجزئيات خاصية التقوِّم بذاتها التي كانت تنسب عادة للجوهر، ولكن ليست لها خاصية الدوام خلال الزمن. وكقاعدة فإن الجزئي حقاً قابل لأن يبقى لفترة قصيرة جداً من الزمن، لا لحظة واحدة، بل لوقت قصير جداً. وبناءً على هذا الاعتبار فإن الجزئيات تختلف عن الجواهر القديمة، لكنها لا تختلف عنها في وضعها المنطقي. وكما تعلم فإنه توجد نظرية منطقية تعارض تماماً تلك الوجهة من النظر، ووفقاً لهذه النظرية فإنه إذا فهمت أي شيء واحد فإنه يمكنك أن تفهم كل شيء. ولكنني اعتقد أن هذه النظرية مبنية على خلط معين يكتنف الأفكار. فعندما تكون على اتصال مباشرة بجزئي، فإنك تفهم هذا الجزئي تماماً باستقلال تام عن الحقيقة القائلة بأنه يوجد عدد هائل من القضايا عن هذا الجزئي والتي لا نعرفها، لكن القضايا التي تتعلق بالجزئي ليست معرفتها ضرورية حتى يمكن أن تعرف ما هذا الجزئي ذاته. إنه من الأولى أن يكون الطريق الآخر هو الصحيح. فلكي تفهم قضية يرد فيها اسم لجزئي، يجب أن تكون فعلا على اتصال مباشر بهذا

الجزئي، فالاتصال المباشر بالأبسط مفروض مسبقاً في فهم الأكثر تعقيداً. لكن المنطق الذي أعارضه يزعم أنه لكي تعرف أي شيء واحد، يتعين عليك أن تعرف كل علاقاته وكل كيفياته، وعلى الإطلاق كل القضايا التي يذكر فيها ذلك الشيء، وبالطبع تستنتج من هذا إن العالم ككل تتداخل أجزاءه ويعتمد بعضها على بعض. لقد تطور المنطق الواحدي على أساس هذا النوع من التفكير. وبصفة عامة فقد يؤيد المرء هذه النظرية بالحديث عن طبيعة الشيء، مفترضاً أن به شيئاً ما نطلق عليه طبيعته، وهذا الشيء المفترض يكون بصفة عامة متميزاً عن الشيء ذاته ؛ومن ثم فيمكنك الحصول على نظرة مريحة تمكنك من استنتاج أي نتائج تلائم هدفك الراهن. وطبيعة الشيء سوف تعني كل القضايا الصادقة التي يذكر فيها الشيء. وبطبيعة الحال فمن الواضح أنه طالما إن كل شيء له علاقات بكل شيء آخر، فلن تعرف كل الوقائع التي يكون شيء ما مكوناً فيها، وبدون أن تكون لديك معرفة بكل شيء في الكون. وعندما تدرك هذا فإن ما يسميه المرء معرفة جزئي ما، تعني مجرد الاتصال المباشر بذلك الجزئي، وهذه المعرفة مفترضة مسبقاً في فهم أي قضية يذكر فيها ذلك الجزئي.وأظن أنك تدرك أيضاً إنك لن تأخذ وجهة النظر التي تذهب إلى أن فهم اسم الجزئي يفترض مسبقاً معرفة بكل القضايا التي تتعلق بذلك الجزئي.

وأود أن أتحدث عن الفهم، فغالباً ما استخدمت تلك العبارة بصورة خاطئة. إن الناس يتحدثون عن «فهم الكون» وما إلى ذلك، لكن الشيء الوحيد الذي يمكنك أن تفهمه حقاً (بالمعنى الدقيق للكلمة) هو رمز، ولتفهم رمزاً ما هو أن تعرف ما الذي يمثله.

والآن أنتقل من الجزئيات إلى المحمولات والعلاقات وما نعنيه بفهم الكلمات التي نستخدمها للمحولات والعلاقات. وجزء كبير مما أقوله في هذه السلسلة من المحاضرات يتكون من أفكار استقيتها من صديقي فتجنشتين؛ إلا أنه لم تكن لدى فرصة لمعرفة مدى التغير الذي طرأ على أفكاره منذ أغسطس

١٩١٤، أو ما إذا كان لا يزال حياً أو ميتاً، لذلك فإنني لا ألقى على أحد بمسئولية هذه الأفكار، بل على كاهلي وحدي تقع المسئولية.

إن فهم المحمول شيء مختلف تماماً عن فهم الاسم. وكما تعلم فإنني أعني بالمحمول الكلمة التي تستخدم لتدل على كيفية مثل «أحمر»، «أبيض»، مربع «مستدير» وفهم تلك الكلمة يتضمن نوعاً مختلفاً من النشاط العقلي عن ذلك المتضمن في فهم اسم ما. لكي تفهم اسم يجب أن تكون على اتصال مباشر بالجزئي الذي هو اسم له، ويجب أن تعرف أن هذا هو اسم ذلك الجزئي. وعلى سبيل المثال، فلكي تفهم «أحمر»، هو أن تفهم ما المقصود بالقول إن شيئاً ما أحمر. وإذا ما نتقلنا إلى صورة القضية، فلن تستطيع أن تعرف فيما يتعلق بأي جزء وليكن «هذا»، إن «هذا أحمر»؛ لكنه ينبغي أن تعرف ما المقصود من القول بأن أي شيء أحمر، إنه يجب أن تفهم ما الذي نعنيه بقولنا عن شيء إنه «يكون أحمر»، وأهمية ذلك إنما تظهر في ارتباطها بنظرية الأنماط، التي سأعالجها فيما بعد. وفي الحقيقة فإن المحمول لا يمكن أن يرد في القضية إلا كمحمول، وإذا ما ظهر إنه يوجد كموضوع، فإن العبارة تتطلب التفسير، إذا لم تكن تتكلم عن الكلمة ذاتها. يمكنك أن تقول «أحمر» «محمول»، لكن عندئذٍ لا بدّ وأن تضع أحمر بين شولتين، لأنك تتكلم عن الكلمة «أحمر». وعندما تفهم «أحمر» فإن ذلك يعني أنك تفهم قضايا صورتها «س أحمر». ولهذا السبب فإن فهم محمول ما شيء أكثر تعقيداً من فهم اسم ما. ويطبق نفس الفهم تماماً على العلاقات، وعلى كل الأشياء التي ليست جزئيات. خذ على سبيل المثال قبل في «س قبل ص»: إنك تفهم «قبل» عندما تفهم ما الذي نقصده إذا كانت س، ص لدينا. ولست أقصد بذلك إنك تعرف ما إذا كانت س قبل ص صادقة وإنما أعني إنك تفهم القضية. وهنا أيضاً يطبق نفس الشيء. فالعلاقة لا ترد إلا كعلاقة وهي لا ترد أبداً كموضوع، ويجب أن تضع ذلك دائماً في صورة حدود شرطية مثل «إذا قلت أن س قبل ص، فإنني أقرر علاقة بين س، ص» وبهذه الطريقة تُوسع الجملة

فتقول «قبل» هي علاقة، حتى تحصل على معناها.

إن الأنواع المختلفة من الكلمات، في واقع الأمر، لها أنواع مختلفة من الاستعمالات ويجب أن تقيد دائماً بالاستعمال الصحيح لا الخاطىء، فالأنماط تنشأ من وضع رموز للاستعمالات الخاطئة مما يفضي إلى المتناقضات المتعلقة بالأنماط.

تبقى لدينا نقطة أخرى قبل أن أترك الموضوعات التي قصدت أن أُعنّى بها في الفترة السابقة، وهذه النقطة ظهرت في نتيجة مناقشتنا في المحاضرة السابقة وهي أنه يمكنك أن تتوصل إلى رد صوري للعلاقات المونادية (على سبيل المثال) إلى العلاقات الثنائية، أو للعلاقات الثنائية إلى العلاقات الثلاثية، أو لكل العلاقات التحتية لنظام معين إلى علاقات فوقية لذلك النظام، لكن الرد العكسي ليس ممكناً على سبيل المثال، افترض إننا أخذنا «أحمر» كمثال، فإننا نقول «هذا أحمر»، «ذلك أحمر»، وما إلى ذلك. والآن إذا كان المرء معتقداً في السبب الذي من أجله نتقدم إلى الأمام بدون قضايا الموضوع المحمول، فإن ذلك الاعتقاد سيكون ضرورياً وسيجعلك تأخذ مقياساً معيناً للشيء الأحمر الذي له علاقة يمكن أن نسميها «تشابه اللون»، أو نفس اللون، ذلك المعيار الذي سيكون بمثابة علاقة مباشرة بحيث لا يتكون من لون معين. وعندئذٍ يمكنك أن تُعرف الأشياء الحمراء بأنها كل الأشياء التي لها خاصية التشابه اللوني مع هذا الشيء القياسي. وقد حبذ باركلي وهيوم هذه المعالجة من الناحية العملية، فيما عدا أنهما لم يتنبها إلى أنهما كانا يقومان برد الكيفيات إلى العلاقات، رغم اعتقادهما في أنهما كانا يتخلصا من «الأفكار المجردة» كلها. وبمثل هذه الطريقة يمكنك تماماً أن تقوم بإجراء رد صوري للمحمولات إلى العلاقات، ولا اعتراض على هذا سواء من الناحية الإمبريقية أو المنطقية، فإذا اعتقدت في أهمية هذا الرد فإنه يمكنك أن تتقدم بنفس الطريقة إلى العلاقات الثنائية التي يصبح بإمكانك أن تردها إلى

العلاقات الثلاثية. إن رويس Royce في هذا الصدد كانت له تأثيرات هامة، فلسبب ما كان يفضل دائماً العلاقات الثلاثية أكثر من العلاقات الثنائية، وقد شرح تفضيله هذا بإسهاماته في المنطق الرياضي وأصول الهندسة.

كل هذا ممكن، ومن ناحيتي فإنني لا أرى أيّ شيء في أنه يمكنك أن تفعله بمجرد ما تكون قد أدركت أنه ممكن. ولا أرى من جانبي أي سبب خاص لأن أفترض أن العلاقات الأبسط التي ترد في العالم هي على سبيل المثال ذات النظام ؛ ولكن ليس هنا سبباً قبليّاً في مواجهة هذا الافتراض. ومن ناحية أخرى فإن العكس مستحيل تماماً فيما عدا بعض الحالات الخاصة التي يكون فيها للعلاقات خواص معينة. على سبيل المثال، العلاقات الثنائية يمكن ردّها لتشابه المحمول حينما تكون تماثيلة ومتعدية. وهكذا فإن علاقة التشابه اللوني مثلاً، سيكون لها الخاصة أنه إذا كانت ﺃ لها ذات التشابه اللوني مع ب، ب لها ذات التشابه مع حـ، إذن ﺃ لها ذات التشابه اللوني مع حـ؛ وإنه إذا كان لـ ﺃ التشابه مع ب، فإن ب لها ذات التشابه مع ﺃ. ولكن الحالة خلاف ذلك فيما يتعلق بالعلاقات اللاتماثلية.

خذ على سبيل المثال ﺃ أكبر من ب. من الواضح أن «ﺃ أكبر من ب» لا تتألف من ﺃ، ب لهما محمول مشترك؛ لأنه إذا كان هذا صحيحاً فإن الأمر سيتطلب أن ب يجب أن تكون أيضاً أكبر من ﺃ. ومن الواضح أيضاً أن هذا المثال لا يتكون من مجرد أن لهما محمولان مختلفان، لأنه إذا كان لـ ﺃ محمول مختلف عن ب، ب لها محمول مختلف عن ﺃ، إذن فإنه في الحالتين سواء في حالة التشابه أو اختلاف المحمول، فإنك تحصل على علاقة تماثلية. على سبيل المثال، إذا كانت ﺃ ذات لون مختلف عن ب، ب ذات لون مختلف عن ﺃ، إذن فعندما تحصل على علاقات تماثلية فإنه تكون لديك علاقات من الممكن صورياً أن تردّها إما إلى تشابه المحمول أو اختلاف المحمول، ولكن لن تكون لديك مثل تلك الإمكانية في حالة العلاقات اللاتماثلية. وهذه اللاإمكانية في

ردّ العلاقات الثنائية لتشابه المحمول أو اختلافه ذات أهمية قصوى فيما يتعلق بالفلسفة التقليـدية، لأن جـزءاً كبيراً من الفلسفـة التقليديـة يعتمد عـلى الافتراض القائل بأن كل قضية هي في واقع الأمر ذات صورة الموضوع ـ المحمول، وبكل تأكيد فإن هذا الأمر ليس هو الحالة. إن تلك النظرية تمثل قدراً كبيراً من الميتافيزيقا التقليدية ومن فكرة الجوهر القديمة، وقدراً كبيراً أيضاً من نظرية المطلق، لذا فإن هذا النوع من النظرة المنطقية التي كان لها تخيلها، سيطرت على الفلسفة بالنظرية القائلة بأنه عليك التعبير دائماً بقضية ذات صورة الموضوع ـ المحمول، مما كان لـه أبلغ تأثـير على الميتـافيزيقـا التقليدية.

تلك هي نهايـة ما كان ينبغي على أن أقوله المرة السابقة، وأتى الآن إلى موضوع محاضرة اليوم، وهو القضايا الجزيئية. إنني أسمي هذه القضايا بالقضايا الجزيئية لأنها تحتوي على قضايا أخرى يمكنك أن تسمى ذراتها، وأعني بالقضايا الجزيئية تلك القضايا التي ترد بها كلمات مثل «أو»، «إذا»، و«و» وهكذا. فإذا قلت «إما أن اليوم هو الثلاثاء، أو إننا جميعاً ارتكبنا خطأ بالحضور هنا» فمثل هذا النوع من القضايا هو ما أعنيه بالقضايا الجزيئية. أو إذا قلت «إذا أمطرت السماء، فسوف أحضر مظلتي»، فإن تلك أيضاً قضية جزيئية لأنها تحتوي الجزأين «أمطرت السماء» و«سوف أحضر مظلتي». وإذا قلت «لقد أمطرت السماء فعلاً وسوف أحضر مظلتي فعلاً»،فإن هذه أيضاً قضية جزيئية. أو إذا قلت افتراض أن السماء تمطر غير متسق مع افتراض عدم إحضاري مظلتي فإن هذه أيضاً قضية جزيئية. وهناك قضايا مختلفة من هذا النوع يمكنك أن تضاعفها إلى ما لا نهاية،وهذه القضايا مبنية من قضايا مرتبطة بكلمات مثل «أو» و«إذا» و«و» وهكذا. وإنك تتذكر إنني عرفت القضية الذرّية بأنها القضية التي تحتوي على فعل واحد مفرد. والآن يوجد لدينا خطان مختلفان للتصنيف،ابتداء من القضايا الذرّية إلى قضايا أكثر منها تركيباً. الاتجاه الأول هو ذلك الذي كنت أتحدث عنه تواً، حين تتقدم إلى القضايا الجزيئية، ويوجد اتجاه آخر سوف أتقدم إليه في محاضرة متأخرة،

حيث لا تكون لديك قضيتان مرتبطتان، وإنما قضية واحدة تحتوي فعلين أو أكثر. والأمثلة على ذلك نحصل عليها من الاعتقاد والرغبة، وما إلى ذلك «أعتقد أن سقراط فانٍ»، لديك في هذه القضية فعلان هما «يعتقد» و«يكون». أو «أرغب لو كنت خالداً»، فأي قضايا من هذا النوع حيث يكون لديك رغبة أو اعتقاد، أو شك، إنما هي قضايا تتضمن فعلان. والكثير من الاتجاهات السيكولوجية يتضمن فعلان من خلال قضية واحدة. ولكنني أتحدث اليوم عن القضايا الجزيئية، وسوف نفهم من هذا أنه يمكنك أنه تكوِّن قضايا بالكلمات «أو» و«و» وهكذا، حيث القضايا المكوِّنة ليست قضايا ذرّية، لكنه يمكننا أن نحدد أنفسنا في اللحظة الراهنة بالحالة التي تكون فيها القضايا المكوّنة قضايا ذرّية. فعندما نأخذ على سبيل المثال قضية ذرّية، أو واحدة من هذه القضايا مثل القضايا «الاعتقادية»، فإنه توجد لديك واقعة واحدة يشار إليها بواسطة القضية. واقعة واحدة تشير إليها إما صدقاً أو كذباً. وجوهر القضية هو أنها يمكن أن تناظر الواقعة بطريقتين، بالطريقة الأولى تناظرها صدقاً، وبالطريقة الثانية تناظرها كذباً ويمكنك أن توضح ذلك برسم مثل هذا:

| | | |
|---|---|---|
| صادق: | القضية | الواقعة |
| كاذب: | الواقعة | القضية |

مفترضاً أن لديك القضية «سقراط فانٍ» فإما أنه توجد الواقعة بأن سقراط فانٍ أو توجد الواقعة بأن سقراط ليس فانياً. في الحالة الأولى فانٍ الواقعة تناظر بطريقة تجعل القضية صادقة، وفي الحالة الثانية فإن الواقعة تناظر بطريقة تجعل القضية كاذبة. وهذا هو أحد الطرق الذي تختلف فيه القضية عن الإسم.

وبطبيعة الحال فإنه توجد قضيتان تناظران لكل واقعة، واحدة صادقة والأخرى كاذبة، ولكنه لا توجد وقائع كاذبة، ومن ثم فإنك لن تحصل على واقعة واحدة لكل قضية بل لكل زوج من القضايا واقعة مناظرة، وهذا كل ما يطبق على القضايا الذرّية. ولكن عندما نأخذ كمثال قضية مثل (p or q)

في «سقراط فانٍ أو سقراط لا يزال حيّاً»، فإنك تجد أن لـديك واقعتـين مختلفتين متضمنتين في صدق أو كذب قضيتك (p or q)، وسوف يكون لديك الواقعة التي تناظر p، وكذلك ستوجد لديك الواقعة التي تناظر q، وكلا من هاتين الواقعتين ملائم في اكتشاف صدق أو كذب (p or q) ولكنني مع هذا لا أفترض وجود واقعة منفصلة مثل «or» في العالم الخارجي تناظر p (or q، فليس من المعقول أنه توجد في العالم الموضوعي الواقعي وقائع تصفها بالقول (p or q)، ولكنني سوف لا أعوِّل كثيراً على ما يصدم المرء كمعقول: وفي وقتنا الراهن فلست أظن أن هناك أية صعوبات سوف تنشأ من الافتراض القائل بأن صدق أو كذب هذه القضية (p or q) لا يعتمد عـلى واقعة موضوعية مفردة تكون منفصلة، ولكنه يعتمد على الواقعتين، واحدة منهما تناظر p والأخرى تناظر q: فكأن القضية p لها واقعة تناظرها، وكذلك القضية q لها واقعة تناظرها، ومعنى هذا أن تقول إن صدق أو كذب القضية (p or q) يعتمد على واقعتين وليس على واقعة واحدة، تماماً كما هو الحال في حالة القضية p والقضية q. وبصفة عامة، فإنه فيما يتصل بالأشياء الموجودة بخلاف القضيتين، فإن كل ما هو ضروري ويتعين عليك أن تعرفه حتى تعرف المعنى فهو، تحت أي الشروط تكون هذه القضايا صادقة، إذا ما كان لديك صدق أو كذب p وصدق أو كذب q. وهذا أمر واضح تماماً. وبذا تصبح لديك اللوحة الآتية للقضية الجزيئية (p or q) باستخدام TT لتشير إلى أن كل من «p، q صادقتين»، T F لتشير إلى أن «p صادقة و q كاذبة» وهكذا.

| TT | TF | FT | FF |
|---|---|---|---|
| T | T | T | F |

حيث السطر الأسفل يقرر صدق أو كذب (p or q). إنه يجب عليك ألا تنظر للعالم الحقيقي لمعرفة «أو»، وانظر فقط في وضع «أو».. أنه لا يوجد مثل ذلك الشيء الذي تشير إليه، وإذا حاولت تحليل (p or q) بهذه الطريقة فإنك ستواجه المتاعب. ولكن معنى الفصل سوف تشرح تماماً الصيغة السابقة المشار إليها.

إنني أطلق على هذه الأشياء دوال صدق القضايا، حينما يعتمد صدق أو كذب القضية الجزيئية فقط على صدق أو كذب القضايا الداخلة فيها. ويطبق نفس الشيء على (p and q) و(إذا p فإن q) و(p ليست متفقة مع q). وعندما أقول (p ليست متفقة مع q) فإنني أعني ببساطة أنهما ليستا صادقتين معاً، ولا أعني أي شيء أكثر من هذا. فتلك الأشياء إذن هي ما تسمى دوال ـ الصدق، والقضايا الجزيئية التي نعني بها اليوم إنما هي حالات لدوال الصدق. إذا كانت p قضية، فإن الجملة «أعتقد p» لا تعتمد في صدقها أو كذبها ببساطة على صدق أو كذب p، طالما أنني أعتقد في صدق بعض القضايا، وليس في صدق كل القضايا، وكذب بعض القضايا وليس كذب كل القضايا.

لقد أردت أن أقدم لك حديثاً مفيداً عن الطريقة التي تبنى بها دوال الصدق المختلفة الأنواع باستخدام طريقة واحدة، خاصة «p ليست متفقة مع q» التي تعني أن كلاً من p، q ليستا صادقتين معاً، وإن واحدة منهما على الأقل كاذبة. وسوف نشير إلى «p ليست متفقة مع q» بالصيغة (p/q).

خذ على سبيل المثال p/p، أي. «p ليست متفقة مع ذاتها». في تلك الحالة من الواضح أن p سوف تكون كاذبة، لذلك يمكن أن تعتبر أن «p/p» على أنها تعني «p كاذبة» أي p / p = لا – p. إن معنى القضايا الجزئية محدد تماماً بلوحة الصدق وليس هناك ما هو أكثر من ذلك، لذلك فإنه عندما يكون لديك شيئان لنفس لوحة الصدق فإنه يمكنك أن تطابق بينهما.

افترض أن لديك الصيغة «إذا p فإن q» هذه الصيغة تعني ببساطة أنه لا يمكن أن يكون لديك p بدون أن تكون لديك q. لذا فإن q ليست متفقة مع كذب q. ومن ثم فإنه

«إذا p فإن q» = p/ (q/q)

وعندما يتضح لديك هذا، فإنما ينتج لأن إذا p صادقة، q كاذبة حيث

لا يمكن أن تكون p صادقة لديك و q كاذبة.

وافترض أنك لديك الصيغة (p or q) فإنها تعني أن كذب p ليس متفقاً مع كذب q، إذا كانت p كاذبة، q ليست كاذبة، والعكس بالعكس. فإن هذه الصيغة تكون كما يلي:

$$(P/p)/(q/q)$$

وافترض أن لديك الصيغة «p و q» كلاهما صادق»، فإن تلك الصيغة سوف تعني أن p ليست متفقة مع q. وعندما تكون p و q كلاهما صادق، فليست هي الحالة أن واحدة منهما على الأقل كاذبة. ومن ثم فإن:

(p/q)/(p/q) = (p و q كلاهما صادق)

إن منطق الاستنباط بأسره معنى ببساط بتراكيب هذه الفكرة وتطوراتها. ولقد كان السيد/ شيفر أول من وضح أن فكرة عدم الاتفاق هذه كافية لغرض المنطق وقد تم إنجاز أشياء كثيرة فيها بعد شيفر على يد السيد/ نيقود Nicod، ولا شك إن هذه الطريقة أبسط بكثير من الطريقة المستخدمة في برنكيبيا ماتيماتيكا، حيث توجد فكرتين ابتدائيتين تبدأ بهما، خاصة فكرة «أو» و«لا». أما هنا في طريقة شيفر فإنه يمكنك أن تبدأ بمقدمة واحد فقط للاستنباط. ولكنني لن أتناول هذا الموضوع أكثر من هذه لأنه يحرك إلى المنطق الرياضي.

ولا أرى أي سبب لافتراض إنه يوجد تعقيد في الوقائع المناظرة لتلك القضايا الجزيئية، لأنه كما كنت أقول، فإن تناظر القضية الجزيئية للوقائع من نوع مختلف عن تناظر القضية الذرّية للواقعة. ولكن هناك نقطة واحدة تتعلق بمدى الارتباط بينهما، وتتمثل في السؤال: هل توجد وقائع سالبة؟ هل توجد مثل تلك الوقائع التي يمكن أن نطلق عليها «سقراط ليس حياً»؟ لقد افترضت في كل ما سبق أن قلته إنه توجد وقائع سالبة. فعلى سبيل المثال إذا قلت «سقراط حي» فإنه توجد واقعة مناظره لهذه القضية في العالم الحقيقي وهي الواقعة «سقراط ليس حياً».وقد يعارض المرء الحديث عن وقائع سالبة،

ونفس الشعور حيث لا ترغب في أن تكون لديك واقع، (p or q) عن العالم. إن لديك شعور عن الوقائع الموجبة فحسب، ولكن القضايا السالبة قد تعبر بطريقة أو بأخرى عن وقائع موجبة. وحينما كنت أحاضر عن هذا الموضوع في جامعة هارفـارد ذهبت إلى أنه توجد وقائع سالبة. وقد أدى هذا القول إلى ارتفاع أصوات معارضة: إن أفراد الفصل لم يسمعوا عن وقائع سالبة من قبل على الإطلاق. ولكنني مع ذلك لا زلت مصراً على أنه توجد وقائع سالبة. ومع ذلك فإن أحد الذين كنت أحاضرهم في هارفارد وهو السيد/ ديموس كتب فيما بعد مقالاً في مجلة «مايند» Mind يشرح فيه لماذا لا توجد وقائع سالبة، وقد ظهرت هذه المقالة في عدد«مايند» إبريل ١٩١٧. ولقد حاول في هذا المقال أن يكثف جهوده ليبين أنه لا توجد وقائع سالبة. وحقيقة يبدو هذا السؤال صعب، ولكنني أطلب منك ألا تكون دجماً طيقيـاً، ولذلك فإنني لم أذهب بصورة إيجابية قوية إلى أنه توجد وقائع سالبة، ولكن ذهبت إلى أنه قد توجد مثل هذه الوقائع السالبة.

وهناك مجموعة من الأمور يمكنك أن تلاحظها من القضايا السالبة، يشير السيد/ديموس أولاً إلى إنه القضية السالبة لا تعتمد بأي طريقة من الطرق على موضوع معرفي لتعريفها، وهنا فإنني أتفق معه. افترض أنك قلت، حينما أقول القضية «سقراط ليس حياً»، إنني أعبر فقط عن عدم اعتقادي في القضية القائلة إن سقراط حي. إن عليك أن تعثر على شيء ما في العالم الحقيقي ليجعل هذا الاعتقاد صادقاً، والسؤال الوحيد هو لماذا يكون الاعتقاد صـادق. تلك هي النقطة الأولى التي يشير إليها ديموس.

أما النقطة الثانية التي يشير إليها فهي أنه لا يجب أن نأخذ القضية السالبة من مجرد مظهرها، ويقول أنه لا يمكنك أن تعتبر القضية «سقراط ليس حياً» على إنها تعبير عن واقعة من نفس النوع الذي تعبر عنه قضية مثل «سقراط إنسان» التي تعبـر عن واقعة. والحجة التي يقدمها على هذا الرأي هي أنه لا يمكنك أن تعتقد بأنه توجد وقائع سالبة في العالم، ويشير إلى أنه لا توجد في العالم الفعلي وقائع مثل «سقراط ليس حياً»، كمثال لوقائع بسيطة،

ومن ثم فإنه لا بدّ وأن نتوصل لتفسير ما للقضايا السالبة، أو تأويل ما، فالقضايا السالبة لا يمكن أن تكون بسيطة تماماً مثل القضايا الموجبة. وإنني سوف أناقش هذه النقطة، لكنني لا أشعر بأي اتفاق معه حول هذه النقطة.

أما النقطة الثالثة التي يشير إليها فإنني لا أتفق معه فيها على الإطلاق وهي عندما ترد الكلمة «لا»،فإنه لا يمكن النظر إليها كمحمول. على سبيل المثال إذ قلت «هذا ليس أحمر» فقد تحاول أن تقول إن «لا - أحمر» هي محمول، لكن هذا ليس صحيحاً بالطبع، والسبب في ذلك إن عدداً كبيراً من القضايا ليست تعبيرات عن محمولات هذا أولاً، ولأن الكلمة «لا» تطبق على كل القضايا، هذا ثانياً. والتعبير الدقيق يكون «ليس: هذا أحمر»، حيث تطبق «لا» على القضية، «هذا أحمر» كلها، ويمكنك أن تلاحظ هذا في العديد من الحالات بالطبع فإذا أخذت حالة مما سأناقشه في الأوصاف مثل: «ملك فرنسا الحالي ليس أصلع» فإذا أخذت «ليس أصلع» محمول، فإن الحكم على هذه القضية سيكون بالكذب على أساس إنه لا يوجد لفرنسا ملك حالي؛ لكن من الواضح أن القضية «ملك فرنسا الحالي أصلع» إنما هي قضية كاذبة، ومن ثم فإن نفيها سيكون قضية كاذبة، وسوف لا تكون هذه هي الحالة إذا أخذت «ليس أصلع» كمحمول، لذا فإنه في كل الحالات التي ترد فيها «لا»، فإنه لا بدّ من تطبيق «لا» على القضية ككل،والصيغة الدقيقة هي «not - p».

ونأتي الآن للتساؤل، كيف نفسر «not- p»، والاقتراح الذي يطرحه السيد/ ديموس هو إننا عندما نقرر «not - p» فإننا نقرر حقيقة إنه توجد قضية ما q تكون صادقة، وليست متفقة مع p (بعبارته «عكس p»، ولكنني أعتقد أن المعنى واحد). إنه يضع تعريفه المقترح كما يلي:

«not - p» تعني «توجد قضية ما q صادقة
وليست متفقة مع p»

مثلاً إذا قلت «هذه الطباشيرة ليست حمراء»، فسوف أعني بذلك أن أقرر أنه توجد قضية ما، وهي في هذه الحالة ستكون القضية،«هذه الطباشيرة

بيضاء»، وهذه القضية ليست متفقة مع القضية «هذه الطباشيرة حمراء»، وأنت تستخدم هذه الصورة العامة السالبة لأنك لا تعرف ما إذا كانت القضية الفعلية صادقة وليست متفقة مع p أو قد يمكنك أن تعرف ما هي القضية الفعلية، لكنك قد تكون أكثر اهتماماً بالواقعة التي تقرر أن p كاذبة أكثر من اهتمامك بالأمثلة الخاصة التي تجعلها كاذبة. مثلما هو الأمر، عندما تكون توّاقاً لأن تثبت أن شخصاً ما كذاب، وتكون مهتماً بكذب القضايا التي سبق أن قررها. وقد تهتم أكثر بقضية عامة أكثر من حالة جزئية، لذا فإنه إذا قرر شخص ما أن هذه الطباشيرة كانت حمراء، فإنك تهتم أكثر بالواقعة القائلة بأنها لم تكن حمراء بدلاً من الواقعة بأنها كانت بيضاء.

وأجد إنه من الصعوبة بمكان أن أعتقد في تلك النظرية للكذب، وأنت نفسك تلاحظ الاعتراض التالي في المقام الأول وهو إنها تجعل اللااتفاق أساسي وواقعة موضوعية ليست أبسط من السماح بالوقائع السالبة. فلا بدّ أن تكون لديك «p ليست متفقة مع q» لكي ترد «not» إلى اللااتفاق. ولأن هذه هي الواقعة المناظرة. إنه من الواضح تماماً، مهما كان تأويل «not» فإنه يوجد تأويل ما سوف يزودك بواقعة. فإذا قلت «لا يوجد فرس النهر في هذه الحجرة» فإنه بوضوح تام توجد طريقة ما لتأويل هذه العبارة بحيث توجد واقعة مناظره لها، ولن تكون الحقيقة أن كل جزء في هذه الحجرة مليء بشيء ما ليس فرس النهر. وسوف تنتهي بالضرورة إلى نوع أو آخر من الواقعة من ذلك الطراز الذي كنت تحاول أن تتجنبه. لقد كنت تحاول أن تتجنب كلا من الوقائع السالبة والوقائع الجزيئية،وكل ما نجحت فيه هو أن نستبدل الوقائع السالبة بالوقائع الجزيئية، ولست اعتبر أن هذا نجاح كوسيلة لتجنب المخالفية، خاصة إذا اعتبرت أن اللااتفاق منظوراً إليه كنوع التعبير الأساسي عن الواقعة، فاللااتفاق ليس بين الوقائع،وإنما يقوم بين القضايا إذا قلت «p لا متفقة مع q» فإن واحدة على الأقل من p، q تكون كاذبة، فمن الواضح أنه لا توجد واقعتين لا متفقتين.

إن اللاتفاق «يقوم بين القضايا»، أي بين p و q، ومن ثم فإذا أخذت اللاتفاق كواقعة أساسية، فإن عليك في تفسير الوقائع السالبة أن تعتبر كواقعة أساسية شيئاً ما متضمن قضايا كمقابلة للوقائع. ومن الواضح تماماً أن القضايا ليست هي ما قد تسميه «حقيقي» إنك إذا أردت أن تقوم بجرد لمحتويات العالم، فإن القضايا لن ترد في هذا الجرد، وإنما سيرد في هذا الجرد وقائع واعتقادات ورغبات وإرادات،لكن لن ترد فيه قضايا. إنها لا توجد مستقلة، لذا فإن اللاتفاق بالنسبة للقضايا مأخوذاً كحقيقة قصوى عن العالم الحقيقي ستحتاج إلى قدر هام كل من المعالجة،ومن ثم فإنني لا أعتقد في نجاح تجنيبنا الوقائع السالبة كنوع من التبسيط.

وإنني أعتقد أنك ستجد إنه من الأبسط أن تأخذ الوقائع السالبة كوقائع، فافتراض أن «سقراط ليس حياً»،وهو حقيقة واقعة موضوعية،بنفس المعنى الذي يكون للواقعة «سقراط إنسان». إن نظرية السيد/ ديموس التي عرضتها هنا هي تطور لأحد المحاولات للتغلب على الوقائع السالبة، لكن للسبب الذي قدمته، لا أعتقد أنها تقدم إجابات شافية، وأعتقد إنك من الأفضل أن تأخذ للواقعة السالبة كوقائع قصوى. والصعوبة تنشأ إذا ما فعلت خلاف ذلك وقلت ما الذي يناظر القضية. فإذا كانت لديك قضية موجبة كاذبة مثل «سقراط حي»، فإن هـذه القضيـة أي تكون كاذبـة بسبب واقعة في العـالم الحقيقي، فالشيء لا يكون كاذباً إلا بسبب واقعه، ولذا فإنك تجد إنه من الصعوبة أن تقول ما الذي يحدث عندما تقوم بإجراء تقرير موجب بأن ذلك كاذب، ما لم تسمح بوجود الوقائع السالبة. إنني أعتقد أن كل هذه التساؤلات صعبة،وإنه توجد حجج تسير في الطريقين دائماً. ولكنني فعلاً أعتقد بأنه توجد وقائع سالبة، ولا توجد وقائع منفصلة، لكن إنكار الوقائع المنفصلة يفضي إلى صعوبات معينة سوف ننظر فيها في محاضرة مقبلة، في علاقتها بالقضايا العامة.

# الفصل الرابع

## القضايا والوقائع

### لأكثر من فعل واحد أو معتقد

لعلكم تتذكرون إننا بعد الكلام عن القضايا الذرّية أشرت إلى صيغتين من القضايا التي تنبع مباشرة من التقدم إلى ما هو أكثر من ذلك:

الأولى: أما القضايا الأولى فقد ناقشتها في المرة السابقة وهي ما أسميه القضايا الجزيئية التي تحتوي على كلمات مثل «أو»، «و»، «إذا»... فإن...».

الثانية: هي القضايا التي تحتوي على فعلين فأكثر مثل، الاعتقاد، الرغبة، التمني... الخ. ولم يكن واضحاً في حالة القضايا الجزيئية إننا يجب أن نتناول أي صورة جديدة للواقعة، لكن نتناول فقط صورة جديدة من القضية، أعني أنه، إذا كان لديك قضية منفصلة مثل «p or q» فإنه ليس من المقبول أن نقول إنه يوجد في العالم واقعة منفصلة تناظر «q or q»، ولكنك تقول إنه توجد واقعة p وأخرى تناظر q، والقضية المنفصلة يستمد صدقها أو كذبها من هاتين الواقعتين المنفصلتين. ومن ثم فإنه في تلك الحالة يجب على المرء أن يهتم بصورة جديدة للقضية فحسب، وليس بصورة جديدة الواقعة. واليوم علينا أن نبحث صورة جديدة من الواقعة.

ولو وصفنا المنطق الفلسفي، فإن الجزء الفلسفي من المنطق هو ذلك الجزء الذي اهتم به في هذه المحاضرات منذ عيد الميلاد (١٩١٧)، كشيء جديد، ولو اخترنا كلمة أكثر بساطة، كحديقة الحيوان تحتوي كل الصور المختلفة للوقائع التي تكون لدينا. فإنني أفضل أن أقول «صور الوقائع» بدلاً من أن أقول «صور القضايا» ولتطبيق ذلك في حالة القضايا الجزيئية التي تناولتها

في المرة السابقة، فإنه لو كان المرء متبعاً هذا التحليل لصور الوقائع، فإنه يعتقد في القضية الجزيئية ذاتها. وعلى حسب نوع الأساس الواقعي Realistic bias الذي يجب أن أشير إليه عند دراسة كل أنواع الميتافيزيقا، فإنني أود أيضاً أن أكون مرتبط في بحث واقعة فعلية معينة أو مجموعة من الوقائع، ويبد لي أن هذا الأمر من ناحية المنطق مساوٍ لمملكة الحيوانات zoology. ففي المنطق أنت معنيُّ بصور الوقائع وبحصولك على مختلف أنواع الوقائع، والأنواع المنطقية المختلفة للوقائع، التي توجد في العالم.

أما الآن فإنني أود أن أشير اليوم إلى الوقائع التي تحدث عندما يعتقد المرء أو يتمنى أو يرغب، والتي لها صور منطقية مختلفة عن الواقعة الذرّية المحتوية على فعل واحد والتي تناولتها بالحديث في المحاضرة الثانية (وبالطبع، فإنه توجد صور عديدة مختلفة تأخذها الوقائع، وعلى وجه التدقيق عدد لا متناه، ولا أود منكم تعتقدوا إنني أتظاهر بتناولها كلها). فعلى سبيل الافتراض لو أخذنا أي تكرار فعلي لمعتقد. فإنني أريدكم أن تفهموا أنني لا أتحدث عن معتقدات بالطريقة التي نتكلم بها عن الأحكام في نظرية المعرفة، والتي قد تقولون فيها يوجد الحكم بأن اثنين واثنين تساوي أربعة (أي حكم له صفة الحقيقة الرياضية)؛ إنني أتحدث عن التكرار الفعلي لمعتقد في عقل شخص ما جزئي في لحظة معينة، ومناقشة ما نوع الواقعة الموجودة. فلو قلت «ما هو اليوم من أيام الأسبوع؟ وتقولون الثلاثاء مثلاً، فهناك يحدث في عقولكم في هذه اللحظة الاعتقاد بأنه يوم الثلاثاء،والشيء الذي أريد أن أتناوله اليوم هو السؤال: ما صورة الواقعة التي تحدث عندما يكون للمرء اعتقاد. وبالطبع فإنكم ترون أن نوع الموضوع مجرد فكرة أولى التي يجب أن يصل إليها المرء ستكون أن المعتقد له علاقة بالقضية. «أعتقد في القضية p»، «أعتقد أن اليوم هو الثلاثاء»؛ «أعتقد أن ٢ + ٢ = ٤» أو أي شيء من هذا النوع. ويبدو في مقابل هذا كما لو كانت لديكم علاقة للموضوع بالنسبة للقضية. ووجهة النظر تلك لا تجري لأسباب عديدة والتي سوف أتناولها ولكن يجب أن تكون لديكم مع

ذلك نظرية من معتقد ليس تماماً من هذا النوع. خذ على سبيل المثال أي نوع من القضية، «اعتقد أن سقراط فانٍ». وافترض إن هذا المعتقد يحدث بالفعل. فالجملة التي ترد هي جملة عن واقعة. لديك هنا فعلان وقد يكون لديك أكثر من فعلان، أو أي عدد أكبر من الواحد. فقد أعتقد أن رأى جون أن سقراط فانٍ. هنا لدينا أكثر من فعلين. وقد يكون لديك أي عدد، ولكن ليس أقل من اثنين. فقد تدرك أنه ليست فقط القضية لها فعلان، بل الواقعة أيضاً، والتي يعبر عنها بالقضية، لها مكونين يناظران الأفعال Verbs. وسأسمي هذه المكونات أفعال على سبيل الاختصار؛ إذ أنه من الصعوبة بمكان أن نجد كلمة لنصف كل هذه الأشياء المشار إليها بالأفعال. وبالطبع، فإن هذا تماماً هو استعمال كلمة فعل بمعنيين، إلا أنني لا أعتقد أن هذا قد يؤدي إلى نوع من الخلط لو فهمت أنه مستخدم هكذا.

هذه الواقعة (الاعتقاد) هي واقعة واحدة. إنها ليست كمثل ما يوجد لديك في القضايا الجزيئية حيث يكون لديك مثلاً (p or q). إنها تماماً واقعة واحدة لها معتقد واحد، وهذا واضح من الحقيقة القائلة إنك تعتقد في كذبها. ومن الواضح أنه من ناحية المعتقد الكاذب أنك لا تستطيع أن تقتطع جزءاً واحداً: لا يمكن القول؛

أنا أعتقد / سقراط فانٍ

وهناك بعض الأسئلة الأكيدة التي قد تنبع عن أمثال هذه الوقائع، وأولها هو، هل هو وقائع لا يمكن إنكارها، أو يمكن ردها بطريقة ما لعلاقات عن وقائع أخرى؟ هل هو من الضروري أن نفترض أنه توجد وقائع لا يمكن ردها، بحيث تعبر عن هذا النوع من الشيء في صيغة لفظية؟ في هذا السؤال وحتى مؤخراً فإنني بكل تأكيد لن أفترض أن أي شك يمكن أن ينجم. فلم يبدو لي حقيقة إلا مؤخراً أن ذلك أمر مشكوك فيه. إنني ما زلت أعتقد بأن هناك وقائع لها تلك الصورة، لكني أرى أن السؤال الجوهري الذي لا بدّ مناقشته، هو:

كلمة إلى آخره هنا تغطي فهم قضية، فهي تغطي الرغبة، الإرادة، وأي اتجاه آخر من هذا النوع قد يخطر على بالك بحيث يتضمن قضية. فمن الطبيعي أن تقول أن المرء يعتقد قضية، وليس من الطبيعي أن تقول أن المرء يرغب في قضية، ولكن كحقيقة واقعة فإن هذا تحيز. فإن ما تعتقده، وما ترغب فيه هو تماماً له نفس الطبيعة. فقد ترغب في الحصول على بعض السكر غداً وبالطبع فقد يمكنك الاعتقاد بأنك تريد؛ ولكني لست متأكداً أن الصورة المنطقية هي ذاتها في حالة الإرادة. وإنني بصدد الاعتقاد بأن حالة الإرادة هي أكثر مشابه لتلك التي في الإدراك من التقدم مباشرة إلى الوقائع، واستبعاد إمكانية الكذب. وعلى أية حالة فإن الرغبة والاعتقاد هما تماماً نفس الصورة منطقياً.

إن البراجماتين وبعض الواقعيين الأمريكيين، والمدرسة التي يمكن أن نسميها الواحدية المحايدة، ينكرون بالمرة أنه توجد مثل تلك الظاهرة مثل الاعتقاد بالمعنى الذي أتناوله. إنهم لا ينكرون ذلك بالكلام؛ إنهم لا يستخدمون نفس نوع اللغة التي استخدمها، وهذا يمثل صعوبة في مقارنة وجهات نظرهم بوجهة نظري، فيجب على المرء أن يصيغ ما يقولونه إلى لغة أكثر أو أقل مشابهة للغتنا قبل أن يختار المرء الموضوع الذي تتشابه أو تختلف فيه. فإذا ما نظرت في أعمال جيمس في مقالة «مقالات في التجريبية الجذرية» أو أعمال ديوي في «مقالاته عن المنطق التجريبي»، فإنك ستجد إنهم ينكرون كلية وجود ظاهرة من هذا النوع مثل الاعتقاد والذي أنا بصدد الإشارة إليه. إنهم يستخدمون الكلمة «معتقد» لكنهم يعنون شيئاً مختلفاً، وهنا تتوصل إلى وجه النظر المسماة «بالسلوكية» والتي وفقاً لها فإنك تعني، إذا ما كان شخصا يعتقد شيئاً، فإن هذا يعني أنه يسلك بطريقة معينة، وهذا يتطابق مع براجماتية جيمس فقد يقول جيمس وديوي: إنني عندما أعتقد في قضية، فإن هذا يعني أن أسلك بطريقة معينة، وأن سلوكي له مميزات أو خصائص معينة، ويكون

اعتقادي صادقاً لو أدى السلوك إلى الغاية المنشودة ويكون كاذباً إذا لم يكن الأمر كذلك. ولو كان هذا صادقاً، فإن هذا يجعل براجماتيتهم نظرة عقلية بحتة للصدق والكذب فإذا قبلت فعلاً وجهات نظرهم فإن الاعتقاد كظاهرة منعزلة لن يحدث. وإذن فإن هذا هو أول شيء يجب أن يأخذه المرء في اعتباره. وهذا يبعدني عن المنطق لاعتبر أن هذا الموضوع يستحق الاعتبار، لأن هذا موضوع ينتمي إلى علم النفس، وهو ملازم للمنطق فقط بهذه الطريقة التي قد تثير شكاً إذا ما كانت هناك أية وقائع لها الصورة المنطقية التي أتكلم عنها. ومن السؤال عن الصورة المنطقية التي تتضمن فعلين أو أكثر فإنه يوجد لديك نوع من التداخل الغريب بين المنطق والدراسات التجريبية؛ وبالطبع فإن هذا قد يحدث في أي مكان، وبهذه الطريقة. فإن الدراسة التجريبية تعطيك مثلاً لشيء له صورة منطقية معينة، وحقاً فإنك لا تستطيع التأكد بأن هناك أشياء لها صورة منطقية معطاة فيما عدا إيجاد مثل، في حد ذاته تجريبي. وبهذه الطريقة فإن الوقائع التجريبية متصلة بالمنطق في نقاط محددة. وأعتقد من الناحية النظرية أن المرء قد يعرف إنه توجد هذه الصور بدون معرفة أي حالة لها، ولكن عملياً، كما هي، فإنها لا يندر وكأنها تحدث. وعملياً فإنه إذا لم تجد مثالاً عن الصورة فإنك لن تجد الصورة ذاتها. فإذا لم أجد مثالاً يحتوي على فعلين أو أكثر، فإنه لن يكون لديك سبب للاعتقاد في النظرية القائلة إن مثل هذه الصورة تحدث.

وعندما نقرأ أعمال أناس مثل جيمس وديوي عن موضوع الاعتقاد، فالشيء الذي يثير انتباهك فوراً هو أن نوع الشيء الذي يعتبرونه كموضوع للاعتقاد مختلف تماماً عن نوع ذلك الشيء الذي أفكر فيه. فإنهم يفكرون فيه دائماً كشيء. إنهم يظنون بأنك حين تعتقد في الله أو هومر؛ فإنك تعتقد في شيء. تلك هي الصورة التي في عقولهم. وبالكلام العادي، فإن الحديث بمثل هذه الصورة، كما يزعمون، والتقريب الفج الأولى الذي قد يقترحونه هو أنك تؤمن بصدق عند وجود مثل هذا الشيء وإنك تعتقد كذباً في حالة عدم

وجوده. ولست أعني أنهم يقولون هذا تماماً، لكن هذه هي وجهة النظر الفجة التي يبدءان منها. فلا يبدو أنهم قد استوعبوا الحقيقة التي تقول إن الجانب الموضوعي للمعتقد معبر عنه بصورة أفضل بقضية بدلاً من كلمة مفردة، وهذا في اعتقادي، له دخل كبير في نظرتهم العامة بشأن ما يتكون منه المعتقد. فموضوع المعتقد من وجهة نظرهم عموماً، ليس علاقات بين أشياء، أو أشياء لها صفات، أو ليست لها صفات، ولكن أشياء مفردة قد توجد أو لا توجد. وهذا الرأي خاطىء خطأً مطلقاً وجذرياً. ففي الدرجة الأولى توجد أحكام كثيرة لا يمكنك إدراجها في الصيغة، وفي المرتبة الثانية فإنها لا تعطي أي تفسير للاعتقادات الكاذبة، لأنك إذا ما اعتقدت بأن شيئاً موجوداً وهو غير موجود، فالشيء غير موجود هو لا شيء ولن يكون تحليلاً صحيحاً للاعتقاد الكاذب لتعتبره كعلاقة لما هو فعلاً لا شيء. وهذا اعتراض لافتراض أن المعتقد يتكون ببساط من علاقة بالشيء. فمن الواضح أنك لو قلت «إنني أعتقد في هوميروس»، ولا يوجد هناك شخص كهوميروس، فإن اعتقادك لن يكون له علاقة بهوميروس، لأن هوميروس ليس له وجود. وكل واقعة تحدث في العالم يجب أن تتكون كلية من مكونات لها وجود، وليس من مكونات لا وجود لها. لذلك فإنك عندما تقول «إنني أعتقد في هوميروس»، فإن ذلك ليس هو التحليل الصحيح للشيء الذي تشير إليه على هذا النحو، أما التحليل الصحيح سوف نأتي إليه في نظرية الأوصاف.

والآن أعود ثانية للنظرية السلوكية التي تكلمت عنها منذ لحظة مضت. فلنفرض على سبيل المثال أنك تعتقد في قيام قطار الساعة ١٠,٢٥. فإن هذا يعني، كما يقال لنا، إنك ستتجه إلى المحطة في زمن معين، وعندما تصل إلى المحطة فإنك ستجد الساعة جاوزت ١٠,٢٤، لذلك فإنك تجري لتلحق بالقطار إن هذا السلوك يكون معتقدك بأن هناك قطار في ذلك الوقت. وإذا ما لحقت بقطارك هذا وأنت تجري فإن معتقدك كان صادقاً. وإذا قام القطار في الساعة ١٠,٢٣ ولم تلحق به كان اعتقادك كاذباً. وهذا هو نوع الشيء الذي

يقولون عنه إنه مكونات للاعتقاد. وليست هناك حالة مفردة للعقل تتكون من تأمل هذه الحقيقة الأزلية والتي بمقتضاها أن القطار سيغادر المحطة في الساعة ١٠,٢٥. وهم يطبقون ذلك على الأشياء الأكثر تجريداً. ولست أشعر من ناحيتي أن هذه النظرة للأشياء يمكن الاعتماد عليها أو الوثوق بها؛ ومن الصعوبة رفضتها لأنها عميقة المعنى، لأنه ربما يشعر المرء، أنه لو أمعن تفكيره فيها ودقق النظر أو أصبح على وعي بكل تضمناتها، ربما يجد المرء أنه شيء يمكن النقاش فيه، وبالرغم من كل ذلك فإنني لا أشعر بأنه يمكن النقاش فيه. وبالطبع، فإن هذه النظرة تتطابق مع نظرية الواحدية المحايدة، والنظرية التي تقول بأن المادة المكونة للعقلي هي ذاتها المادة المكونة للفيزيقي physical، تماماً كدليل تليفونات مكتب البريد الذي يوزع الناس حسب الموقع الجغرافي والحروف الأبجدية. وهذه النظرية ككل تتطابق مع تلك، ولست أعني بالضرورة أن كل من يتنبؤن بالواحدة يتنبئون بالأخرى. ولكن الأثنين فعلاً متطابقان. ولو أخذنا بذلك الرأي، فإن عليك أن تفسر الاعتقاد والرغبة لأن الأشياء من هذا القبيل تبدو على إنها ظاهرة عقلية. إنها تبدو وقد أخذت بعيداً عن نوع ذلك الشيء الذي يحدث في العالم الفيزيائي (المادي). فالناس سيبدأون في العمل لشرح الأشياء مثل المعتقد، وردها للسلوك الجسمي، واعتقادك في قضية معينة سوف يساهم فيه سلوكك الجسمي. وبكلمات أخرى فإن هذه النظرية التي نصل إليها، تمكنك من أن تستمر بدون عقل. فالصدق والكذب في هذه الحالة يتكون من العلاقة بسلوكك الجسمي لواقعة محددة وقوع الواقعة المتميزة التي هي غرض سلوكك، كما لو كان، وعندما يكون سلوكك مرضياً بالنسبة للواقع بأن اعتقادك كاذب ومن وجهة النظر هذه، فإن الماهية المنطقية Logical essence ستكون علاقة بين واقعتين لهما نفس الصورة كعلاقة علِّية Causal Relation. إنما، من الناحية الأولى سيكون هناك سلوكك الجسمي كواقعة أولى، ومن الناحية الأخرى فإن الواقعة بأن القطار سيغادر في كيت وكيت من الوقت، وهي واقعة أخرى، ومن هذه العلاقة لهاتين الواقعتين فإن الظواهر ككل

تتكون. والشيء الذي ستحصل عليه من الناحية المنطقية التي لها نفس الصورة كما هو لديك في العلة Cause حيث يكون لديك إن «هذه الواقعة تسبب تلك». إنها صورة منطقية مختلفة تماماً من الوقائع المحتوية على فعلين والتي أتحدث عنها اليوم.

ومن الطبيعي أن أنحاز إلى صالح نظرية الواحدية المحايدة لأنها تستخدم نصل أوكام. وإنني دائماً أود أن أناقش الفلسفة بأبسط الوسائل الممكنة لأن هذا جزئياً يقلل من مخاطره الأخطاء، ولأنه ليس من الضروري أن تنكر الكائنات entities التي لا تقررها، وعندئذٍ فإنك تغامر بأقل ما يمكن من الخطأ من خلال أبسط عدد من الكائنات التي تفترضها. والسبب الاخر ـ ربما لسبب ما ـ هو أن كل تقليل في عدد الكائنات يزيد كمية العمل للمنطق الرياضي التي نفضلها في بناء الأشياء التي تشبه الكائنات التي استخدمتها افتراضاً. لذلك فإن نظرية الواحدية المحايدة ككل محبذة بالنسبة لي، ولكنني أجد صعوبة بالغة في الاعتقاد فيها. وسوف تجد مناقشة للسؤال ككل في بعض المقالات التي كتبتها في مجلة مونست في عددها الصادر في يوليو ١٩١٤، وفي العددين السابقين عليه،وفي الحقيقة فإنني أود إعادة صياغتها لأنني أعتقد أن بعض البراهين التي استخدمتها ضد الواحدية المحايدة ليست صحيحة. إنني ركزت كل اعتمادي على البرهان عن «الجزئيات التأكيدية»، مثل «هذا»، «أنا»، وكل فصل تلك الكلمات، ولاختيار جزئيات معينة من العالم بعلاقتها بالمرء ذاته، وأعتقد بأن الحقيقة التي تقول بأنها أو الجزئيات المرتبطة بها، إنها موجودة «حاضرة» أمامك في نفس لحظة الكلام هذا، بالطبع، هي ما أسميها، جزئي مؤكد، إنها ببساطة اسم علم لموضوع الانتباه الراهن، فاسم العلم، لا يعني شيء. إنه غامض، لأن موضوع الانتباه دائم التغير من لحظة لأخرى ومن شخص لآخر. وأعتقد أنه في غاية الصعوبة أن تتخلص من الشعور الذي ينتابك، لتفسير ما تعنيه بكلمة مثل «هذا»، وما الذي يفضي إليه غياب اللاتجزء. فقد تقول إنه في العالم الفيزيقي البحت تكون هناك

تجزئة، فكل أجزاء الزمن وكل الأماكن ستبدو مؤكدة تماماً. ولكن الذي يحدث هو أن نختار بعض الوقائع، الماضية والمستقبلة وكل هذه الأشياء، تنبع من هذا، ولم أرى بنفسي كيف يستطيع المرء أن يعني بمفهوم كهذا على أساس الواحدية المحايدة. ولست أفرض ذلك بصفة قطعية، وإنني لا أرى فقط كيف يمكن أن نفعل ذلك. سأفترض لبقية هذه المحاضرة إنه توجد مثل تلك الوقائع كالاعتقادات والرغبات وما إلى ذلك. ويستغرق ذلك كل محاضرتي حتى نبحث هذا السؤال تماماً. وهكذا فإننا نعود مرة أخرى للأسئلة المنطقية البحتة بعد هذه المرحلة من التوغل السيكولوجي والتي أعتذر عنها.

### ٢ ـ ما هي حالة أ في «أنا أعتقد أ»

لن تستطيع القول بأنك تعتقد وقائع، لأن اعتقاداتك قد تكون مخطئة أحياناً، فقد يمكنك القول بأنه يمكنك إدراك وقائع، لأن الإدراك غير معرض للخطأ. وكلما كانت الوقائع قائمة بذاتها كلما استحال الخطأ. عندئذٍ فإنك لن تستطيع القول إنك تعتقد وقائع. بل يجب أن تقول إنك تعتقد قضايا. ومن ذلك فإنه من الجلي أن القضايا هي لا شيء، وبناءً عليه فإن ذلك لا يكون بمثابة نظره صادقة للموضوع. وعندما أقول «من الجلي أن القضايا هي لا شيء» فليس هذا واضحاً تماماً. فلقد انقضى الوقت عندما فكرت أنه توجد هناك قضايا، ولكن ليس من المستحب بالنسبة لي أن أقول إنه بالإضافة إلى الوقائع يوجد أيضاً هذه الأشياء الغريبة وكمثال لذلك «اليوم الأربعاء» بينما يكون في الواقع هو الثلاثاء. ولست أعتقد بأن ذلك يحدث في العالم الحقيقي بل إن ذلك أكثر مما يعتقد فيه المرء، وإني أظن أنه لا يمكن لأي شخص ذات إحساس حي بالحقيقة أن يتخيل ذلك. واحد صعوبات دراسة المنطق أنه دراسة مجردة تماماً تتناول الأشياء التي لا يمكن أن تتخيلها، والتي هي أكثر تجريداً، لذلك لا تستطيع أن تبحث ذلك بعناية ما لم يكن لديك نظرة ثاقبة إلى ما هو حقيقي. فيجب أن تكون لك هذه البصيرة المتقدمة في المنطق،

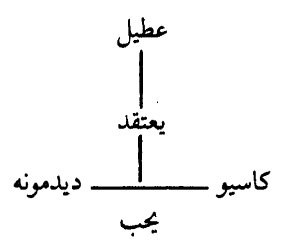
وإلا فإنك ستتخيل أشياء عجيبة وأظن أن مينونج غير كفء في نظرته للحقيقة. ويدعى مينونج أنه يوجد شيء مثل المربع المستدير ولكن لا وجود له، وغير متقوم Subsist أبداً، ولكن بالرغم من عدم وجوده فهو موجود، وعندما تقول «المربع الدائري وهم» فإنه يأخذ في الاعتبار إنه هناك موضوع هو «المربع الدائري» ومحموله، «وهم»، ولا يمكن لشخص واقعي أن يحلل هذه القضية، فتقديري أن تلك القضية تتطلب تحليلاً بطريقة لا يمكن من خلالها اعتبار القضية التي تتطلب تحليلاً يمثل تلك الطريقة فإنه لن يكون لك أن تعتبر المربع المستدير كمكون لهذه القضية. ولافتراض ذلك في العالم الفعلي للطبيعة فإنه توجد مجموعة كاملة من القضايا الكاذبة تدور في عقلي بضراوة. ولا استطيع أن أتخيل ذلك. ولا أستطيع أن أعتقد بأنه موجودة وقائم بنفس المعنى الذي ينسحب على وجود الوقائع. ويبدو لي شيء عن الواقعة أن «اليوم هو الثلاثاء»، على مستوى مختلف للحقيقة من الافتراض بأن «اليوم هو الأربعاء»، وعندما أتحدث عن القضية «اليوم هو الأربعاء» فإنني لا أعني بأن ذلك يحدث في العقل مستقبلاً بنفس القدر الذي تعتقد بأنه الأربعاء، إلا أنني أتحدث عن النظرية بأن هناك شيء منطقي، شيء لا يتضمن العقل بأي حال من الأحوال، وشيء من هذا القبيل لا أعتقد أنكم ستكونون عنه قضية كاذبة. وفي اعتقادي أن القضية الكاذبة يجب أينما تحدث، أن تكون معرضة للتحليل، وأن تأخذ كأجزاء، وتمزق إربا، وتظهر على إنها قطع بسيطة منفصلة لواقعة واحدة والتي فيها القضية الكاذبة استبعدت من التحليل. أقول ذلك ببساطة مستنداً إلى ما أسميه بغريزة الحقيقة. ويجب أن أقول في كلمة أو اثنتين شيئاً عن الحقيقة. إنها كلمة غامضة ومعظم استعمالاتها في غير موضعها. وعندما أتكلم عن الحقيقة كما أفعل الآن، يمكن أن أشرح بطريقة أفضل ما أعنيه بالقول إنني أعني كل شيء يجب أن تذكره في وصف كامل للعالم، والذي يحمل لك المعنى الذي أقصده. والآن فإنني لا أعتقد بأن القضايا الكاذبة يجب أن تذكر في وصف تام للعالم. وستكون الاعتقادات الكاذبة، بالطبع، بمثابة افتراضات كاذبة ترمي إلى ما لا يمكن حدوثه، ولكنها

ليست قضايا كاذبة في حد ذاتها، ولذلك عندما كما يقول المرء، تعتقد في قضية كاذبة، فإن ذلك لن يكون بمثابة نظرة دقيقة لما يحدث. فليس من الصواب أن تقول «إنني أعتقد القضية أ» وتعتبر الحدث نفسه علاقة مزدوجة بيني وبين أ. والصورة المنطقية هي تماماً نفس الشيء سواء أكنت تعتقد في قضية صادقة أو كاذبة. ومن ثم فإنه في كل الأحوال لا تعتبر الاعتقاد علاقة مزدوجة بينك وبين القضية، ويجب عليك تحليل القضية وتعالج اعتقادك بطريقة مختلفة. وعليه فإن الاعتقاد لا يحوى في الواقع قضية كمكون بل تحدي مكونات القضية فقط كمكونات. لن تستطيع القول حين تعتقد «ما الذي تعتقد فيه»؟ إذ أنه ليست هناك إجابة على هذا السؤال، أعني أنه لا يوجد هناك شيء بمفرده تعتقد فيه. «إنني أعتقد أن اليوم هو الثلاثاء». يجب ألا تفترض أن «اليوم هو الثلاثاء» موضوع مفرد أعتقد فيه. لأن هذا سيكون خطأ جسيم. وليست تلك هي الطريقة السليمة لتحليل الحدث، رغم أن هذا التحليل مريح من الناحية اللغوية، ويجب أن يبقى عليه المرء وهو على علم تام بأنه ليس صادقاً.

**٣ ـ كيف يمكن أن نصف الصورة المنطقية للاعتقاد؟**

أريد أن ألقي نظرة على طريقة تكون المعتقد. هذا سؤال سهل جداً إنك لن تستطيع أن تعمل ما ينبغي أن أسميه خريطة في عالم الاعتقاد a map -in- space of a bclief. يمكنك أن ترسم خريطة لواقعة ذريّة ولكن ليس لاعتقاد، وذلك لسبب بسيط وهو أن العلاقات المكانية هي دائماً من النوع الذرّي أو تعقيدات من النوع الذرّي. سأحاول شرح ما أعنيه. ترتبط هذه النقطة بكون الحكم مشتملاً على فعلين وبالواقعة التي بمقتضاها يكون الفعلان يجب أن يردا كأفعال لأنه لو كان شيء هو فعل فإنه لا يستطيع أن يحدث إلا على هيئة فعل، افترض أنني قلت «أ يعتقد أن ب يحب جـ» أو أن «عطيل يعتقد أن ديمونه تحب كاسيو» هنا لديك معتقد كاذب. إنه توجد لديك تلك الحالة الغريبة من أمر الواقع وهي أن الفعل «يحب» يرد في هذه

القضية، ويبدو أنه يحدث كرابط لديدمونه بكاسيو، بينما الواقع لا يحدث ذلك، ولكن يحدث بطريقة مشابهة للطريقة التي يحدث بها الفعل. أعني أنه عندما أ يعتقد أن ب يحب جـ، يجب أن يكون لديك فعلاً حيث تحدث كلمة «يحب». ولا يمكنك أن تضع بديلاً في هذا الموضع. لذلك فإنه من الواضح أن الفعل التابع (الفعل بخلاف يعتقد) يعمل كفعل، ويبدو أنه يربط بين حدين، لكنه كأمر مسلم به لا يعقل ذلك عندما يكون الحكم كاذباً. وهذا ما يكون متاهه طبيعية المعتقد. وسنلاحظ أنه كلما اقتربنا من مركز ونظرية الخطأ سيكون لدى المرء مشكلة كيفية تناول الخطأ بدون افتراض وجود ما هو غير موجود. أعني أن كل نظرية للخطأ عاجلاً أم آجلاً ستحطّم نفسها بافتراض وجود ما هو غير موجود، كقولي «ديدمونه تحب كاسيو»، يبدو هذا وكأنه كما لو كان حب غير موجود بين ديدمونه وكاسيو، ولكن هذا خطأ تماماً كعدم وجود العنقاء. ولذلك يجب أن تفسر نظرية الحكم ككل بطريقة أخرى. ونأتي الآن لموضوع الخريطة. افترض وجود خريطة كتلك.




إن مسألة عمل خريطة ليست بالغرابة التي قد تتوقعها لأنها جزء من نظرية الرمزية الكاملة. ومن الهام إدراك أين وكيف تكون رمزية من هذا النوع خاطئة أين ومتى تكون خاطئة هي موجودة في الرمز الذي تكون لديك فيه هذه العلاقة التي تربط بين هذين الشيئين وفي الواقع إنها لا تربطهما. إنك لن تجد في المكان أي تكرار له نفس الصورة المنطقية للاعتقاد. وعندما أقول «من نفس الصورة المنطقية» أعني أن إحدى هذه الصور يمكن الحصول عليها من الأخرى بإحلال المكونات لأحداهما بالحدود الجديدة. فإذا قلت «ديدمونه

تحب كاسيو» فإن هذه من نفس الصورة» أ يكون على يمين ب. إنهما من نفس الصورة تماماً، وأقول إن لا شيء يحدث في المكان له نفس صورة الاعتقاد. وعليَّ أن أتقدم هنا بنوع جديد من الشيء لأضمه لمملكتنا الجديدة، ليس كعضو آخر من أفرادنا السابقة بل نوع جديد، واكتشاف هذه الحقيقة يرجع إلى السيد فتجنشتين.

وهناك الكثير والغريب عن الاعتقاد من الوجهة المنطقية. وإحدى هذه الغرائب إنك تستطيع أن تعتقد قضايا ذات أنواع عديدة من الصور. أستطيع أن أعتقد أن «هذا أبيض» وأن ٢ + ٢ = ٤، فهما صورتان مختلفتان ويمكن الاعتقاد في كلاهما. والتكرار الفعلي يمكن أن يكون من نفس الصورة المنطقية في هاتين الحالتين نظراً للاختلاف الشاسع في صورتي القضايا المعتقدة. لذلك قد يبدو أن الاعتقاد لا يمكن أن يكون منطقياً واحداً في كل الحالات المختلفة، بل يجب أن يكون متميزاً وفقاً لطبيعة القضية التي تعتقدها. فإذا كان لديك «أعتقد p» و«أعتقد q» هاتين الواقعتين، إذا كانت p ليست ذات نفس الصورة المنطقية، ليست من نفس الصورة المنطقية بالمعنى الذي أشرت إليه منذ قليل، الذي يعني أنه من «اعتقد p» يمكنك أن تشتق «أعتقد q» بإحلال مكونات الواحدة مكان الأخرى. فإن هذا يعني أن الاعتقاد نفسه لا يمكن تناوله كنوع تام قائم - في حد ذاته - فالاعتقاد يجب أن يكون له صورتين منطقيتين مختلفتين على حسب طبيعة الشيء المعتقد فيه، لذلك فإن التشابه الظاهري في الاعتقاد في الحالات المختلفة خادع.

هناك شيئان رئيسيان يجب على المرء أن يلاحظهما بالنسبة للموضوع الذي نتناوله الآن. أولهما استحالة معالجة القضية المعتقدة ككائن مستقل، يدخل كوحدة في حدوث الاعتقاد، والآخر هو استحالة وضع الفعل التابع في مستوى واحد مع حدوده كحد لشيء في الاعتقاد. هذه نقطة أعتقد أن نظرية الحكم التي عرضتها منذ سنوات مضت كانت بسيطة، لأنني وقتئذٍ تناولت موضوع الفعل،كما لو أن المرء يمكن أن يضعه كموضوع مثل الحدود، وإذا ما

استطاع المرء أن يضع «يحب» على نفس المستوى مع ديدمونه وكاسيو كحد للعلاقة «اعتقاد». فإن هذا يفسر لنا سر تركيزي في محاضرة اليوم على الحقيقة بأنه يوجد فعلان على الأقل. وآمل أن تغفروا لي أن كثيراً مما أقوله اليوم مؤقت ويتكون من توضيح الصعوبات. فالموضوع ليس بالسهولة ولم يعالج أو يناقش كثيراً من قبل. ومن الناحية العملية فحتى مؤخراً لم يبدأ أحد بأن يضع في الاعتبار مشكلة طبيعة الاعتقاد في علاقاتها مع أي شيء كجهاز منطقي تام، ولذلك فالمرء لديه القليل من المساعدة في أي نقاش ولذلك فإن عليه أن يقنع بذلك في كثير من المواضع في الوقت الراهن بالإشارة إلى الصعوبات بدلاً من إيجاد الحلول لها.

٤ - مشكلة التسمية الاصطلاحية:

ما نوع الاسم الذي يمكن أن نطلقه على أفعال مثل «يعتقد» ويتمنى.. إلخ؟ إنني أرجح تسميتها «أفعال قضائية». لأن هذه فقط تسميه مقترحة للسهولة، لأنها أفعال لها صورة الربط بين موضوع وقضية. وكما كنت أشرح ذلك، فإنها لا تفعل ذلك في الواقع، ولكنه من الملائم أن نسميها أفعال قضائية.وبالطبع يمكنك تسميتها اتجاهات، لكنه لا يعجبني ذلك لأنه مصطلح سيكولوجيا، وبالرغم من أن كل اللحظات في تجاربنا هي سيكولوجية، فليس ما يدعو لافتراض أن كل الأفعال التي أتحدث عنها سيكولوجية. وليس هناك سبب إطلاقاً يدعو إلى هذا الأمر. وعلى المرء أن يتذكر دائماً منجزات سبينوزا اللانهائية للعدم Deity. ومن المحتمل أنه يوجد في العالم تماثل لمنجزاته اللانهائية. وليس لدينا أي اتصال مباشر بها. لكنه ليس هناك أي سبب لافتراض أن العقلي والفيزيقي يرهقان كل الكون (العالم) ككل، ولذلك فلا يستطيع أحداً أن يقول إن كل اللحظات من نوع منطقي هي من طبيع: كذا وكذا والتي هي ليست بطبيعة منطقية: ولن تستطيع أن تعرف بما فيه الكفاية عن العالم بصدد ذلك. لذلك فلن اقترح أن كل الأفعال التي لها الصورة المبسطة للاعتقاد والإرادة هي أفعال سيكولوجية. أستطيع فقط أن أقول كل ما أعرفه عنها.

وألاحظ أنه في الموجز قلت إنني سأتناول الصدق والكذب اليوم، لكنه ليس هناك الكثير لقوله عنهما خاصة إنهما دائما الحدوث في كل وقت. والشيء الأول الذي يخطر للتفكير عن الصدق أو الكذب، هو القضية، والقضية هي لا شيء. لكن المعتقد يكون صادقاً أو كاذباً بنفس الطريقة التي للقضية، ولذلك ستكون لديك وقائع في العالم صادقة أو كاذبة ولقد ذكرت منذ وهلة أنه لا يوجد تمييز بين الصدق والكذب من خلال الوقائع، ولكنه بالنسبة لنوع خاص من الوقائع التي نسميها معتقدات، يوجد بهذا المعنى أن الاعتقاد الذي يحدث قد يكون صادقاً أو كاذباً، رغم أنه واقعة متساوية في كلا الحالتين. وقد يسمى المرء الأمنيات بأنها كاذبة بنفس المعنى عندما يتمنى المرء شيئاً لا يحدث، فالصدق والكذب يعتمد على القضية التي يدخلان فيها. وأنا معنيٌ بالتفكير بأن الإدراك، كمقابل للاعتقاد، يذهب مباشرة للواقعة وليس من خلال القضية. وعندما تدرك الواقعة فإنك، تبعد الخطأ من الحدوث، لأن لحظة كونها واقعة يستبعد خطأك تماماً. وأعتقد أن التحقيق في مصدره الأخير سوف يرد نفسه دائماً لإدراك الوقائع. ولذلك فإن الصورة المنطقية للإدراك ستكون مختلفة عن الصورة المنطقية للاعتقاد، وهذا بسبب ذلك الظرف بأنها واقعة قد دخلت إليها. وهذا يثير أيضاً عدد من الصعوبات المنطقية والتي لا أود الخوض فيها، ولكني أعتقد أنك تستطيع أن ترى بنفسك أن الإدراك سيتضمن أيضاً فعلين كما في حالة الاعتقاد، وإنني معنيٌ بالاعتقاد بأن الإرادة تختلف عن الرغبة من الناحية المنطقية، بطريقة مشابه تماما لتلك التي يختلف فيها الإدراك عن الاعتقاد. ولكن هذا سيأخذنا بعيداً عن المنطق لمناقشة وجهة النظر تلك.

# The Philosophy of Logical Atomism

*By*

*Bertrand Russell*

# 1918

# THE PHILOSOPHY OF LOGICAL ATOMISM

The following [is the text] of a course of eight lectures delivered in [Gordon Square] London, in the first months of 1918, [which] are very largely concerned with explaining certain ideas which I learnt from my friend and former pupil Ludwig Wittgenstein. I have had no opportunity of knowing his views since August, 1914, and I do not even know whether he is alive or dead.* He has therefore no responsibility for what is said in these lectures beyond that of having originally supplied many of the theories contained in them.

CONTENTS



* [This was written in 1918 as a preface to publication in three consecutive issues of *The Monist*. I have made four trivial editorial changes for the present reprinting in an entirely different format.—R.C.M.]

# Part I

# Facts and Propositins .

## I. FACTS AND PROPOSITIONS

THIS course of lectures which I am now beginning I have called the Philosophy of Logical Atomism. Perhaps I had better begin by saying a word or two as to what I understand by that title. The kind of philosophy that I wish to advocate, which I call Logical Atomism, is one which has forced itself upon me in the course of thinking about the philosophy of mathematics, although I should find it hard to say exactly how far there is a definite logical connexion between the two. The things I am going to say in these lectures are mainly my own personal opinions and I do not claim that they are more than that.

As I have attempted to prove in *The Principles of Mathematics*, when we analyse mathematics we bring it all back to logic. It all comes back to logic in the strictest and most formal sense. In the present lectures, I shall try to set forth in a sort of outline, rather briefly and rather unsatisfactorily, a kind of logical doctrine which seems to me to result from the philosophy of mathematics—not exactly logically, but as what emerges as one reflects: a certain kind of logical doctrine, and on the basis of this a certain kind of metaphysic. The logic which I shall advocate is atomistic, as opposed to the monistic logic of the people who more or less follow Hegel. When I say that my logic is atomistic, I mean that I share the common-sense belief that there are many separate things; I do not regard the apparent multiplicity of the world as consisting merely in phases and unreal divisions of a single indivisible Reality. It results from that, that a considerable part of what one would have to do to justify the sort of philosophy I wish to advocate would consist in justifying the process of analysis. One is often told that the process of analysis is falsification, that when you analyse any given concrete whole you falsify it and that the results of analysis are not true. I do not think that is a right view. I do not mean to say, of course, and nobody would maintain, that when you have analysed you keep everything that you had before you analysed. If you did, you would never attain anything in analysing. I do not propose to meet the views that I disagree with by controversy, by arguing against those views, but rather by positively setting forth what I believe to be the truth about the matter, and endeavouring all the way through to make the views that I advocate result

inevitably from absolutely undeniable data. When I talk of 'undeniable data' that is not to be regarded as synonymous with 'true data', because 'undeniable' is a psychological term and 'true' is not. When I say that something is 'undeniable', I mean that it is not the sort of thing that anybody is going to deny; it does not follow from that that it is true, though it does follow that we shall all think it true—and that is as near to truth as we seem able to get. When you are considering any sort of theory of knowledge, you are more or less tied to a certain unavoidable subjectivity, because you are not concerned simply with the question what is true of the world, but 'What can I know of the world?' You always have to start any kind of argument from something which appears to you to be true; if it appears to you to be true, there is no more to be done. You cannot go outside yourself and consider abstractly whether the things that appear to you to be true are true; you may do this in a particular case, where one of your beliefs is changed in consequence of others among your beliefs.

The reason that I call my doctrine *logical* atomism is because the atoms that I wish to arrive at as the sort of last residue in analysis are logical atoms and not physical atoms. Some of them will be what I call 'particulars'—such things as little patches of colour or sounds, momentary things—and some of them will be predicates or relations and so on. The point is that the atom I wish to arrive at is the atom of logical analysis, not the atom of physical analysis.

It is a rather curious fact in philosophy that the data which are undeniable to start with are always rather vague and ambiguous. You can, for instance, say: 'There are a number of people in this room at this moment.' That is obviously in some sense undeniable. But when you come to try and define what this room is, and what it is for a person to be in a room, and how you are going to distinguish one person from another, and so forth, you find that what you have said is most fearfully vague and that you really do not know what you meant. That is a rather singular fact, that everything you are really sure of, right off is something that you do not know the meaning of, and the moment you get a precise statement you will not be sure whether it is true or false, at least right off. The process of sound philosophizing, to my mind, consists mainly in passing from those obvious, vague, ambiguous things, that we feel quite sure of, to something precise, clear, definite, which by

reflection and analysis we find is involved in the vague thing that we start from, and is, so to speak, the real truth of which that vague thing is a sort of shadow. I should like, if time were longer and if I knew more than I do, to spend a whole lecture on the conception of vagueness. I think vagueness is very much more important in the theory of knowledge than you would judge it to be from the writings of most people. Everything is vague to a degree you do not realize till you have tried to make it precise, and everything precise is so remote from everything that we normally think, that you cannot for a moment suppose that is what we really mean when we say what we think.

When you pass from the vague to the precise by the method of analysis and reflection that I am speaking of, you always run a certain risk of error. If I start with the statement that there are so and so many people in this room, and then set to work to make that statement precise, I shall run a great many risks and it will be extremely likely that any precise statement I make will be something not true at all. So you cannot very easily or simply get from these vague undeniable things to precise things which are going to retain the undeniability of the starting-point. The precise propositions that you arrive at may be *logically* premisses to the system that you build up upon the basis of them, but they are not premisses for the theory of knowledge. It is important to realize the difference between that from which your knowledge is, in fact, derived, and that from which, if you already had complete knowledge, you would deduce it. Those are quite different things. The sort of premiss that a logician will take for a science will not be the sort of thing which is first known or easiest known: it will be a proposition having great deductive power, great cogency and exactitude, quite a different thing from the actual premiss that your knowledge started from. When you are talking of the premiss for theory of knowledge, you are not talking of anything objective, but of something that will vary from man to man, because the premisses of one man's theory of knowledge will not be the same as those of another man's. There is a great tendency among a very large school to suppose that when you are trying to philosophize about what you know, you ought to carry back your premisses further and further into the region of the inexact and vague, beyond the point where you yourself are, right back to the child or

monkey, and that anything whatsoever that *you* seem to know—but that the psychologist recognizes as being the product of previous thought and analysis and reflection on your part—cannot really be taken as a premiss in your own knowledge. That, I say, is a theory which is very widely held and which is used against that kind of analytic outlook which I wish to urge. It seems to me that when your object is, not simply to study the history or development of mind, but to ascertain the nature of the world, you do not want to go any further back than you are already yourself. You do not want to go back to the vagueness of the child or monkey, because you will find that quite sufficient difficulty is raised by your own vagueness. But there one is confronted by one of those difficulties that occur constantly in philosophy, where you have two ultimate prejudices conflicting and where argument ceases. There is the type of mind which considers that what is called primitive experience must be a better guide to wisdom than the experience of reflective persons, and there is the type of mind which takes exactly the opposite view. On that point I cannot see any argument whatsoever. It is quite clear that a highly educated person sees, hears, feels, does everything in a very different way from a young child or animal, and that this whole manner of experiencing the world and of thinking about the world is very much more analytic than that of a more primitive experience. The things we have got to take as premisses in any kind of work of analysis are the things which appear to *us* undeniable—to us here and now, as we are—and I think on the whole that the sort of method adopted by Descartes is right: that you should set to work to doubt things and retain only what you cannot doubt because of its clearness and distinctness, not because you are sure not to be induced into error, for there does not exist a method which will safeguard you against the possibility of error. The wish for perfect security is one of those snares we are always falling into, and is just as untenable in the realm of knowledge as in everything else. Nevertheless, granting all this, I think that Descartes's method is on the whole a sound one for the starting-point.

I propose, therefore, always to begin any argument that I have to make by appealing to data which will be quite ludicrously obvious. Any philosophical skill that is required will consist in the selection of those which are capable of yielding a good deal of

reflection and analysis, and in the reflection and analysis themselves.

What I have said so far is by way of introduction.

The first truism to which I wish to draw your attention—and I hope you will agree with me that these things that I call truisms are so obvious that it is almost laughable to mention them—is that the world contains *facts*, which are what they are whatever we may choose to think about them, and that there are also *beliefs*, which have reference to facts, and by reference to facts are either true or false. I will try first of all to give you a preliminary explanation of what I mean by a 'fact'. When I speak of a fact—I do not propose to attempt an exact definition, but an explanation, so that you will know what I am talking about—I mean the kind of thing that makes a proposition true or false. If I say 'It is raining', what I say is true in a certain condition of weather and is false in other conditions of weather. The condition of weather that makes my statement true (or false as the case may be), is what I should call a 'fact'. If I say 'Socrates is dead', my statement will be true owing to a certain physiological occurrence which happened in Athens long ago. If I say, 'Gravitation varies inversely as the square of the distance', my statement is rendered true by astronomical fact. If I say, 'Two and two are four', it is arithmetical fact that makes my statement true. On the other hand, if I say 'Socrates is alive', or 'Gravitation varies directly as the distance', or 'Two and two are five', the very same facts which made my previous statements true show that these new statements are false.

I want you to realize that when I speak of a fact I do not mean a particular existing thing, such as Socrates or the rain or the sun. Socrates himself does not render any statement true or false. You might be inclined to suppose that all by himself he would give truth to the statement 'Socrates existed', but as a matter of fact that is a mistake. It is due to a confusion which I shall try to explain in the sixth lecture of this course, when I come to deal with the notion of existence. Socrates* himself, or any particular thing just by itself, does not make any proposition true or false. 'Socrates is dead' and 'Socrates is alive' are both of them statements about Socrates. One is true and the other false. What I call a fact is the sort of

* I am here for the moment treating Socrates as a 'particular'. But we shall see shortly that this view requires modification.

thing that is expressed by a whole sentence, not by a single name like 'Socrates'. When a single word does come to express a fact, like 'fire' or 'wolf', it is always due to an unexpressed context, and the full expression of a fact will always involve a sentence. We express a fact, for example, when we say that a certain thing has a certain property, or that it has a certain relation to another thing; but the thing which has the property or the relation is not what I call a 'fact'.

It is important to observe that facts belong to the objective world. They are not created by our thoughts or beliefs except in special cases. That is one of the sort of things which I should set up as an obvious truism, but, of course, one is aware, the moment one has read any philosophy at all, how very much there is to be said before such a statement as that can become the kind of position that you want. The first thing I want to emphasize is that the outer world—the world, so to speak, which knowledge is aiming at knowing—is not completely described by a lot of 'particulars', but that you must also take account of these things that I call facts, which are the sort of things that you express by a sentence, and that these, just as much as particular chairs and tables, are part of the real world. Except in psychology, most of our statements are not intended merely to express our condition of mind, though that is often all that they succeed in doing. They are intended to express facts, which (except when they are psychological facts) will be about the outer world. There are such facts involved, equally when we speak truly and when we speak falsely. When we speak falsely it is an objective fact that makes what we say false, and it is an objective fact which makes what we say true when we speak truly.

There are a great many different kinds of facts, and we shall be concerned in later lectures with a certain amount of classification of facts. I will just point out a few kinds of facts to begin with, so that you may not imagine that facts are all very much alike. There are *particular facts*, such as 'This is white'; then there are *general facts*, such as 'All men are mortal'. Of course, the distinction between particular and general facts is one of the most important. There again it would be a very great mistake to suppose that you could describe the world completely by means of particular facts alone. Suppose that you had succeeded in chronicling every single particular fact throughout the universe, and that there did not

exist a single particular fact of any sort anywhere that you had not chronicled, you still would not have got a complete description of the universe unless you also added: 'These that I have chronicled are all the particular facts there are'. So you cannot hope to describe the world completely without having general facts as well as particular facts. Another distinction, which is perhaps a little more difficult to make, is between positive facts and negative facts, such as 'Socrates was alive'—a positive fact—and 'Socrates is not alive'—you might say a negative fact.* But the distinction is difficult to make precise. Then there are facts concerning particular things or particular qualities or relations, and, apart from them, the completely general facts of the sort that you have in logic, where there is no mention of any constituent whatever of the actual world, no mention of any particular thing or particular quality or particular relation, indeed strictly you may say no mention of anything. That is one of the characteristics of logical propositions, that they mention nothing. Such a proposition is: 'If one class is part of another, a term which is a member of the one is also a member of the other'. All those words that come in the statement of a pure logical proposition are words really belonging to syntax. They are words merely expressing form or connexion, not mentioning any particular constituent of the proposition in which they occur. This is, of course, a thing that wants to be proved; I am not laying it down as self-evident. Then there are facts about the properties of single things; and facts about the relations between two things, three things, and so on; and any number of different classifications of some of the facts in the world, which are important for different purposes.

It is obvious that there is not a dualism of true and false facts; there are only just facts. It would be a mistake, of course, to say that all facts are true. That would be a mistake because true and false are correlatives, and you would only say of a thing that it was true if it was the sort of thing that *might* be false. A fact cannot be either true or false. That brings us on to the question of statements or propositions or judgments, all those things that do have the duality of truth and falsehood. For the purposes of logic, though not, I think, for the purposes of theory of knowledge, it is natural to concentrate upon the proposition as the thing which is going

* Negative facts are further discussed in a later lecture.

to be our typical vehicle on the duality of truth and falsehood. A proposition, one may say, is a sentence in the indicative, a sentence asserting something, not questioning or commanding or wishing. It may also be a sentence of that sort preceded by the word 'that'. For example, 'That Socrates is alive', 'That two and two are four', 'That two and two are five', anything of that sort will be a proposition.

A proposition is just a symbol. It is a complex symbol in the sense that it has parts which are also symbols: a symbol may be defined as complex when it has parts that are symbols. In a sentence containing several words, the several words are each symbols, and the sentence composing them is therefore a complex symbol in that sense. There is a good deal of importance to philosophy in the theory of symbolism, a good deal more than at one time I thought. I think the importance is almost entirely negative, i.e., the importance lies in the fact that unless you are fairly self-conscious about symbols, unless you are fairly aware of the relation of the symbol to what it symbolizes, you will find yourself attributing to the thing properties which only belong to the symbol. That, of course, is especially likely in very abstract studies such as philosophical logic, because the subject-matter that you are supposed to be thinking of is so exceedingly difficult and elusive that any person who has ever tried to think about it knows you do not think about it except perhaps once in six months for half a minute. The rest of the time you think about the symbols, because they are tangible, but the thing you are supposed to be thinking about is fearfully difficult and one does not often manage to think about it. The really good philosopher is the one who does once in six months think about it for a minute. Bad philosophers never do. That is why the theory of symbolism has a certain importance, because otherwise you are so certain to mistake the properties of the symbolism for the properties of the thing. It has other interesting sides to it too. There are different kinds of symbols, different kinds of relation between symbol and what is symbolized, and very important fallacies arise from not realizing this. The sort of contradictions about which I shall be speaking in connexion with types in a later lecture all arise from mistakes in symbolism, from putting one sort of symbol in the place where another sort of symbol ought to be. Some of the notions that have been thought

absolutely fundamental in philosophy have arisen, I believe, entirely through mistakes as to symbolism—e.g., the notion of existence, or, if you like, reality. Those two words stand for a great deal that has been discussed in philosophy. There has been the theory about every proposition being really a description of reality as a whole and so on, and altogether these notions of reality and existence have played a very prominent part in philosophy. Now my own belief is that as they have occurred in philosophy, they have been entirely the outcome of a muddle about symbolism, and that when you have cleared up that muddle, you find that practically everything that has been said about existence is sheer and simple mistake, and that is all you can say about it. I shall go into that in a later lecture, but it is an example of the way in which symbolism is important.

Perhaps I ought to say a word or two about what I am understanding by symbolism, because I think some people think you only mean mathematical symbols when you talk about symbolism. I am using it in a sense to include all language of every sort and kind, so that every word is a symbol, and every sentence, and so forth. When I speak of a symbol I simply mean something that 'means' something else, and as to what I mean by 'meaning' I am not prepared to tell you. I will in the course of time enumerate a strictly infinite number of different things that 'meaning' may mean but I shall not consider that I have exhausted the discussion by doing that. I think that the notion of meaning is always more or less psychological, and that it is not possible to get a pure logical theory of meaning, nor therefore of symbolism. I think that it is of the very essence of the explanation of what you mean by a symbol to take account of such things as knowing, of cognitive relations, and probably also of association. At any rate I am pretty clear that the theory of symbolism and the use of symbolism is not a thing that can be explained in pure logic without taking account of the various cognitive relations that you may have to things.

As to what one means by 'meaning', I will give a few illustrations. For instance, the word 'Socrates', you will say, means a certain man; the word 'mortal' means a certain quality; and the sentence 'Socrates is mortal' means a certain fact. But these three sorts of meaning are entirely distinct, and you will get into the most hopeless contradictions if you think the word 'meaning' has

the same meaning in each of these three cases. It is very important not to suppose that there is just one thing which is meant by 'meaning', and that therefore there is just one sort of relation of the symbol to what is symbolized. A name would be a proper symbol to use for a person; a sentence (or a proposition) is the proper symbol for a fact.

A belief or a statement has duality of truth and falsehood, which the fact does not have. A belief or a statement always involves a proposition. You say that a man believes that so and so is the case. A man believes that Socrates is dead. What he believes is a proposition on the face of it, and for formal purposes it is convenient to take the proposition as the essential thing having the duality of truth and falsehood. It is very important to realize such things, for instance, as that *propositions are not names for facts*. It is quite obvious as soon as it is pointed out to you, but as a matter of fact I never had realized it until it was pointed out to me by a former pupil of mine, Wittgenstein. It is perfectly evident as soon as you think of it, that a proposition is not a name for a fact, from the mere circumstance that there are *two* propositions corresponding to each fact. Suppose it is a fact that Socrates is dead. You have two propositions: 'Socrates is dead' and 'Socrates is not dead'. And those two propositions corresponding to the same fact, there is one fact in the world which makes one true and one false. That is not accidental, and illustrates how the relation of proposition to fact is a totally different one from the relation of name to the thing named. For each fact there are two propositions, one true and one false, and there is nothing in the nature of the symbol to show us which is the true one and which is the false one. If there were, you could ascertain the truth about the world by examining propositions without looking around you.

There are two different relations, as you see, that a proposition may have to a fact: the one the relation that you may call being true to the fact, and the other being false to the fact. Both are equally essentially logical relations which may subsist between the two, whereas in the case of a name, there is only one relation that it can have to what it names. A name can just name a particular, or, if it does not, it is not a name at all, it is a noise. It cannot be a name without having just that one particular relation of naming a certain thing, whereas a proposition does not cease to be a

proposition if it is false. It has these two ways, of being true and being false, which together correspond to the property of being a name. Just as a word may be a name or be not a name but just a meaningless noise, so a phrase which is apparently a proposition may be either true or false, or may be meaningless, but the true and false belong together as against the meaningless. That shows, of course, that the formal logical characteristics of propositions are quite different from those of names, and that the relations they have to facts are quite different, and therefore propositions are not names for facts. You must not run away with the idea that you can name facts in any other way; you cannot. You cannot name them at all. You cannot properly name a fact. The only thing you can do is to assert it, or deny it, or desire it, or will it, or wish it, or question it, but all those are things involving the whole proposition. You can never put the sort of thing that makes a proposition to be true or false in the position of a logical subject. You can only have it there as something to be asserted or denied or something of that sort, but not something to be named.

### *Discussion*

*Question*: Do you take your starting-point 'That there are many things' as a postulate which is to be carried along all through, or has to be proved afterward?

*Mr. Russell*: No, neither the one nor the other. I do not take it as a postulate that 'There are many things'. I should take it that, in so far as it can be proved, the proof is empirical, and that the disproofs that have been offered are *a priori*. The empirical person would naturally say, there are many things. The monistic philosopher attempts to show that there are not. I should propose to refute his *a priori* arguments. I do not consider there is any *logical* necessity for there to be many things, nor for there not to be many things.

*Question*: I mean in making a start, whether you start with the empirical or the *a priori* philosophy, do you make your statement just at the beginning and come back to prove it, or do you never come back to the proof of it?

*Mr. Russell*: No, you never come back. It is like the acorn to the oak. You never get back to the acorn in the oak. I should like a statement which would be rough and vague and have that sort

of obviousness that belongs to things of which you never know what they mean, but I should never get back to that statement. I should say, here is a thing. We seem somehow convinced that there is truth buried in this thing somewhere. We will look at it inside and out until we have extracted something and can say, now that is true. It will not really be the same as the thing we started from because it will be so much more analytic and precise.

*Question*: Does it not look as though you could name a fact by a date?

*Mr. Russell*: You can apparently name facts, but I do not think you can really: you always find that if you set out the whole thing fully, it was not so. Suppose you say 'The death of Socrates'. You might say, that is a name for the fact that Socrates died. But it obviously is not. You can see that the moment you take account of truth and falsehood. Supposing he had not died, the phrase would still be just as significant although there could not be then anything you could name. But supposing he had never lived, the sound 'Socrates' would not be a name at all. You can see it in another way. You can say 'The death of Socrates is a fiction'. Suppose you had read in the paper that the Kaiser had been assassinated, and it turned out to be not true. You could then say, 'The death of the Kaiser is a fiction'. It is clear that there is no such thing in the world as a fiction, and yet that statement is a perfectly sound statement. From this it follows that 'The death of the Kaiser' is not a name.

# Part II

# Particulars, Predicates, and Relations

## II. PARTICULARS, PREDICATES, AND RELATIONS

I propose to begin to-day the analysis of facts and propositions, for in a way the chief thesis that I have to maintain is the legitimacy of analysis, because if one goes into what I call Logical Atomism that means that one does believe the world can be analysed into a number of separate things with relations and so forth, and that the sort of arguments that many philosophers use against analysis are not justifiable.

In a philosophy of logical atomism one might suppose that the first thing to do would be to discover the kinds of atoms out of which logical structures are composed. But I do not think that is quite the first thing; it is one of the early things, but not quite the first. There are two other questions that one has to consider, and one of these at least is prior. You have to consider:

1. Are the things that look like logically complex entities really complex?
2. Are they really entities?

The second question we can put off; in fact, I shall not deal with it fully until my last lecture. The first question, whether they are really complex, is one that you have to consider at the start. Neither of these questions is, as it stands, a very precise question. I do not pretend to start with precise questions. I do not think you can start with anything precise. You have to achieve such precision as you can, as you go along. Each of these two questions, however, is *capable* of a precise meaning, and each is really important.

There is another question which comes still earlier, namely: what shall we take as prima facie examples of logically complex entities? That really is the first question of all to start with. What sort of things shall we regard as prima facie complex?

Of course, all the ordinary objects of daily life are apparently complex entities: such things as tables and chairs, loaves and fishes, persons and principalities and powers—they are all on the face of it complex entities. All the kinds of things to which we habitually give proper names are on the face of them complex entities: Socrates, Piccadilly, Rumania, Twelfth Night or anything you like to think of, to which you give a proper name, they are all apparently complex entities. They seem to be complex systems bound together into some kind of a unity, that sort of a unity that leads to the bestowal of a single appellation. I think it is the contem-

plation of this sort of apparent unity which has very largely led to the philosophy of monism, and to the suggestion that the universe as a whole is a single complex entity more or less in the sense in which these things are that I have been talking about.

For my part, I do not believe in complex entities of this kind, and it is not such things as these that I am going to take as the prima facie examples of complex entities. My reasons will appear more and more plainly as I go on. I cannot give them all to-day, but I can more or less explain what I mean in a preliminary way. Suppose, for example, that you were to analyse what appears to be a fact about Piccadilly. Suppose you made any statement about Piccadilly, such as: 'Piccadilly is a pleasant street'. If you analyse a statement of that sort correctly, I believe you will find that the fact corresponding to your statement does not contain any constituent corresponding to the word 'Piccadilly'. The word 'Piccadilly' will form part of many significant propositions, but the facts corresponding to these propositions do not contain any single constituent, whether simple or complex, corresponding to the word 'Piccadilly'. That is to say, if you take language as a guide in your analysis of the fact expressed, you will be led astray in a statement of that sort. The reasons for that I shall give at length in Lecture VI, and partly also in Lecture VII, but I could say in a preliminary way certain things that would make you understand what I mean. 'Piccadilly', on the face of it, is the name for a certain portion of the earth's surface, and I suppose, if you wanted to define it, you would have to define it as a series of classes of material entities, namely those which, at varying times, occupy that portion of the earth's surface. So that you would find that the logical status of Piccadilly is bound up with the logical status of series and classes, and if you are going to hold Piccadilly as real, you must hold that series of classes are real, and whatever sort of metaphysical status you assign to them, you must assign to it. As you know, I believe that series and classes are of the nature of logical fictions: therefore that thesis, if it can be maintained, will dissolve Piccadilly into a fiction. Exactly similar remarks will apply to other instances: Rumania, Twelfth Night, and Socrates. Socrates, perhaps, raises some special questions, because the question what constitutes a person has special difficulties in it. But, for the sake of argument, one might identify Socrates with the series of his experiences. He would be really a series of classes, because one has many experiences simultaneously. Therefore he comes to be very like Piccadilly.

Considerations of that sort seem to take us away from such prima facie complex entities as we started with to others as being more stubborn and more deserving of analytic attention, namely facts. I explained last time what I meant by a fact, namely, that sort of thing that makes a proposition true or false, the sort of thing which is the case when your statement is true and is not the case when your statement is false. Facts are, as I said last time, plainly something you have to take account of if you are going to give a complete account of the world. You cannot do that by merely enumerating the particular things that are in it: you must also mention the relations of these things, and their properties, and so forth, all of which are facts, so that facts certainly belong to an account of the objective world, and facts do seem much more clearly complex and much more not capable of being explained away than things like Socrates and Rumania. However you may explain away the meaning of the word 'Socrates', you will still be left with the truth that the proposition 'Socrates is mortal' expresses a fact. You may not know exactly what Socrates means, but it is quite clear that 'Socrates is mortal' does express a fact. There is clearly some valid meaning in saying that the fact expressed by 'Socrates is mortal' is *complex*. The things in the world have various properties, and stand in various relations to each other. That they have these properties and relations are *facts*, and the things and their qualities or relations are quite clearly in some sense or other components of the facts that have those qualities or relations. The analysis of apparently complex *things* such as we started with can be reduced by various means, to the analysis of facts which are apparently about those things. Therefore it is with the analysis of *facts* that one's consideration of the problem of complexity must begin, not by the analysis of apparently complex things.

The complexity of a fact is evidenced, to begin with, by the circumstance that the proposition which asserts a fact consists of several words, each of which may occur in other contexts. Of course, sometimes you get a proposition expressed by a single word but if it is expressed fully it is bound to contain several words. The proposition 'Socrates is mortal' may be replaced by 'Plato is mortal' or by 'Socrates is human'; in the first case we alter the subject, in the second the predicate. It is clear that all the propositions in which the word 'Socrates' occurs have something in common, and again all the propositions in which the word 'mortal' occurs have something in common, something which they do not

have in common with all propositions, but only with those which are about Socrates or mortality. It is clear, I think, that the facts corresponding to propositions in which the word 'Socrates' occurs have something in common corresponding to the common word 'Socrates' which occurs in the propositions, so that you have that sense of complexity to begin with, that in a fact you can get something which it may have in common with other facts, just as you may have 'Socrates is human' and 'Socrates is mortal', both of them facts, and both having to do with Socrates, although Socrates does not constitute the whole of either of these facts. It is quite clear that in that sense there is a possibility of cutting up a fact into component parts, of which one component may be altered without altering the others, and one component may occur in certain other facts though not in all other facts. I want to make it clear, to begin with, that there is a sense in which facts can be analysed. I am not concerned with all the difficulties of any analysis, but only with meeting the prima facie objections of philosophers who think you really cannot analyse at all.

I am trying as far as possible again this time, as I did last time, to start with perfectly plain truisms. My desire and wish is that the things I start with should be so obvious that you wonder why I spend my time stating them. That is what I aim at, because the point of philosophy is to start with something so simple as not to seem worth stating, and to end with something so paradoxical that no one will believe it.

One prima facie mark of complexity in propositions is the fact that they are expressed by several words. I come now to another point, which applies primarily to propositions and thence derivatively to facts. You can understand a proposition when you understand the words of which it is composed even though you never heard the proposition before. That seems a very humble property, but it is a property which marks it as complex and distinguishes it from words whose meaning is simple. When you know the vocabulary, grammar, and syntax of a language, you can understand a proposition in that language even though you never saw it before. In reading a newspaper, for example, you become aware of a number of statements which are new to you, and they are intelligible to you immediately, in spite of the fact that they are new, because you understand the words of which they are composed. This characteristic, that you can understand a proposition through the understanding of its component words, is absent

from the component words when those words express something simple. Take the word 'red', for example, and suppose—as one always has to do—that 'red' stands for a particular shade of colour. You will pardon that assumption, but one never can get on otherwise. You cannot understand the meaning of the word 'red' except through seeing red things. There is no other way in which it can be done. It is no use to learn languages, or to look up dictionaries. None of these things will help you to understand the meaning of the word 'red'. In that way it is quite different from the meaning of a proposition. Of course, you can give a definition of the word 'red', and here it is very important to distinguish between a definition and an analysis. All analysis is only possible in regard to what is complex, and it always depends, in the last analysis, upon direct acquaintance with the objects which are the meanings of certain simple symbols. It is hardly necessary to observe that one does not define a thing but a symbol. (A 'simple' symbol is a symbol whose parts are not symbols.) A simple symbol is quite a different thing from a simple thing. Those objects which it is impossible to symbolize otherwise than by simple symbols may be called 'simple', while those which can be symbolized by a combination of symbols may be called 'complex'. This is, of course, a preliminary definition, and perhaps somewhat circular, but that doesn't much matter at this stage.

I have said that 'red' could not be understood except by seeing red things. You might object to that on the ground that you can define red, for example, as 'The colour with the greatest wave-length'. That, you might say, is a definition of 'red' and a person could understand that definition even if he had seen nothing red, provided he understood the physical theory of colour. But that does not really constitute the meaning of the word 'red' in the very slightest. If you take such a proposition as 'This is red' and substitute for it 'This has the colour with the greatest wave-length', you have a different proposition altogether. You can see that at once, because a person who knows nothing of the physical theory of colour can understand the proposition 'This is red', and can know that it is true, but cannot know that 'This has the colour which has the greatest wave-length'. Conversely, you might have a hypothetical person who could not see red, but who understood the physical theory of colour and could apprehend the proposition 'This has the colour with the greatest wave-length', but who would not be able to understand the proposition 'This is red' as under-

stood by the normal uneducated person. Therefore it is clear that if you define 'red' as 'The colour with the greatest wave-length',

you are not giving the actual meaning of the word at all; you are simply giving a true description, which is quite a different thing, and the propositions which result are different propositions from those in which the word 'red' occurs. In that sense the word 'red' cannot be defined, though in the sense in which a correct description constitutes a definition it can be defined. In the sense of analysis you cannot define 'red'. That is how it is that dictionaries are able to get on, because a dictionary professes to define all words in the language by means of words in the language, and therefore it is clear that a dictionary must be guilty of a vicious circle somewhere, but it manages it by means of correct descriptions.

I have made it clear, then, in what sense I should say that the word 'red' is a simple symbol and the phrase 'This is red' a complex symbol. The word 'red' can only be understood through acquaintance with the object, whereas the phrase 'Roses are red' can be understood if you know what 'red' is and what 'roses' are, without ever having heard the phrase before. That is a clear mark of what is complex. It is the mark of a complex symbol, and also the mark of the object symbolized by the complex symbol. That is to say, propositions are complex symbols, and the facts they stand for are complex.

The whole question of the meaning of words is very full of complexities and ambiguities in ordinary language. When one person uses a word, he does not mean by it the same thing as another person means by it. I have often heard it said that that is a misfortune. That is a mistake. It would be absolutely fatal if people meant the same things by their words. It would make all intercourse impossible, and language the most hopeless and useless thing imaginable, because the meaning you attach to your words must depend on the nature of the objects you are acquainted with, and since different people are acquainted with different objects, they would not be able to talk to each other unless they attached quite different meanings to their words. We should have to talk only about logic—a not wholly undesirable result. Take, for example, the word 'Piccadilly'. We, who are acquainted with Piccadilly, attach quite a different meaning to that word from any which could be attached to it by a person who had never been in London: and, supposing that you travel in foreign parts and expatiate on Piccadilly, you will convey to your hearers entirely different

propositions from those in your mind. They will know Piccadilly as an important street in London; they may know a lot about it, but they will not know just the things one knows when one is walking along it. If you were to insist on language which was unambiguous, you would be unable to tell people at home what you had seen in foreign parts. It would be altogether incredibly inconvenient to have an unambiguous language, and therefore mercifully we have not got one.

Analysis is not the same thing as definition. You can define a term by means of a correct description, but that does not constitute an analysis. It is analysis, not definition, that we are concerned with at the present moment, so I will come back to the question of analysis.

We may lay down the following provisional definitions:

> That the components of a proposition are the symbols we must understand in order to understand the proposition;
>
> That the components of the fact which makes a proposition true or false, as the case may be, are the *meanings* of the symbols which we must understand in order to understand the proposition.

That is not absolutely correct, but it will enable you to understand my meaning. One reason why it fails of correctness is that it does not apply to words which, like 'or' and 'not', are parts of propositions without corresponding to any part of the corresponding facts. This is a topic for Lecture III.

I call these definitions *preliminary* because they start from the complexity of the proposition, which they define psychologically, and proceed to the complexity of the fact, whereas it is quite clear that in an orderly, proper procedure it is the complexity of the fact that you would start from. It is also clear that the complexity of the fact cannot be something merely psychological. If in astronomical fact the earth moves round the sun, that is genuinely complex. It is not that you think it complex, it is a sort of genuine objective complexity, and therefore one ought in a proper, orderly procedure to start from the complexity of the world and arrive at the complexity of the proposition. The only reason for going the other way round is that in all abstract matters symbols are easier to grasp. I doubt, however, whether complexity, in that

fundamental objective sense in which one starts from complexity of a fact, is definable at all. You cannot analyse what you mean by complexity in that sense. You must just apprehend it—at least so I am inclined to think. There is nothing one could say about it, beyond giving criteria such as I have been giving. Therefore, when you cannot get a real proper analysis of a thing, it is generally best to talk round it without professing that you have given an exact definition.

It might be suggested that complexity is essentially to do with symbols, or that it is essentially psychological. I do not think it would be possible seriously to maintain either of these views, but they are the sort of views that will occur to one, the sort of thing that one would try, to see whether it would work. I do not think they will do at all. When we come to the principles of symbolism which I shall deal with in Lecture VII, I shall try to persuade you that in a logically correct symbolism there will always be a certain fundamental identity of structure between a fact and the symbol for it; and that the complexity of the symbol corresponds very closely with the complexity of the facts symbolized by it. Also, as I said before, it is quite directly evident to inspection that the fact, for example, that two things stand in a certain relation to one another—e.g., that this is to the left of that—is itself objectively complex, and not merely that the apprehension of it is complex. The fact that two things stand in a certain relation to each other, or any statement of that sort, has a complexity all of its own. I shall therefore in future assume that there is an objective complexity in the world, and that it is mirrored by the complexity of propositions.

A moment ago I was speaking about the great advantages that we derive from the logical imperfections of language, from the fact that our words are all ambiguous. I propose now to consider what sort of language a logically perfect language would be. In a logically perfect language the words in a proposition would correspond one by one with the components of the corresponding fact, with the exception of such words as 'or', 'not', 'if', 'then', which have a different function. In a logically perfect language, there will be one word and no more for every simple object, and everything that is not simple will be expressed by a combination of words, by a combination derived, of course, from the words for

the simple things that enter in, one word for each simple component. A language of that sort will be completely analytic, and will show at a glance the logical structure of the facts asserted or denied. The language which is set forth in *Principia Mathematica* is intended to be a language of that sort. It is a language which has only syntax and no vocabulary whatsoever. Barring the omission of a vocabulary I maintain that it is quite a nice language. It aims at being that sort of a language that, if you add a vocabulary, would be a logically perfect language. Actual languages are not logically perfect in this sense, and they cannot possibly be, if they are to serve the purposes of daily life. A logically perfect language, if it could be constructed, would not only be intolerably prolix, but, as regards its vocabulary, would be very largely private to one speaker. That is to say, all the names that it would use would be private to that speaker and could not enter into the language of another speaker. It could not use proper names for Socrates or Piccadilly or Rumania for the reasons which I went into earlier in the lecture. Altogether you would find that it would be a very inconvenient language indeed. That is one reason why logic is so very backward as a science, because the needs of logic are so extraordinarily different from the needs of daily life. One wants a language in both, and unfortunately it is logic that has to give way, not daily life. I shall, however, assume that we have constructed a logically perfect language, and that we are going on State occasions to use it, and I will now come back to the question which I intended to start with, namely, the analysis of facts.

The simplest imaginable facts are those which consist in the possession of a quality by some particular thing. Such facts, say, as 'This is white'. They have to be taken in a very sophisticated sense. I do not want you to think about the piece of chalk I am holding, but of what you see when you look at the chalk. If one says, 'This is white' it will do for about as simple a fact as you can get hold of. The next simplest would be those in which you have a relation between two facts, such as: 'This is to the left of that'. Next you come to those where you have a triadic relation between three particulars. (An instance which Royce gives is '*A* gives *B* to *C*'.) So you get relations which require as their minimum three terms, those we call triadic relations; and those which require four terms, which we call tetradic, and so on. There you have a

whole infinite hierarchy of facts—facts in which you have a thing and a quality, two things and a relation, three things and a relation, four things and a relation, and so on. That whole hierarchy constitutes what I call *atomic* facts, and they are the simplest sort of fact. You can distinguish among them some simpler than others, because the ones containing a quality are simpler than those in which you have, say, a pentadic relation, and so on. The whole lot of them, taken together, are as facts go very simple, and are what I call atomic facts. The propositions expressing them are what I call *atomic propositions*.

In every atomic fact there is one component which is naturally expressed by a verb (or, in the case of quality, it may be expressed by a predicate, by an adjective). This one component is a quality or dyadic or triadic or tetradic . . . relation. It would be very convenient, for purposes of talking about these matters, to call a quality a 'monadic relation' and I shall do so; it saves a great deal of circumlocution.

In that case you can say that all atomic propositions assert relations of varying orders. Atomic facts contain, besides the relation, the terms of the relation—one term if it is a monadic relation, two if it is dyadic, and so on. These 'terms' which come into atomic facts I define as 'particulars'.

Particulars = terms of relations in atomic facts. Df.

That is the definition of particulars, and I want to emphasize it because the definition of a particular is something purely logical. The question whether this or that is a particular, is a question to be decided in terms of that logical definition. In order to understand the definition it is not necessary to know beforehand 'This is a particular' or 'That is a particular'. It remains to be investigated what particulars you can find in the world, if any. The whole question of what particulars you actually find in the real world is a purely empirical one which does not interest the logician as such. The logician as such never gives instances, because it is one of the tests of a logical proposition that you need not know anything whatsoever about the real world in order to understand it.

Passing from atomic facts to atomic propositions, the word expressing a monadic relation or quality is called a 'predicate', and the word expressing a relation of any higher order would

generally be a verb, sometimes a single verb, sometimes a whole phrase. At any rate the verb gives the essential nerve, as it were, of the relation. The other words that occur in the atomic propositions, the words that are not the predicate or verb, may be called the subjects of the proposition. There will be one subject in a monadic proposition, two in a dyadic one, and so on. The subjects in a proposition will be the words expressing the terms of the relation which is expressed by the proposition.

The only kind of word that is theoretically capable of standing for a particular is a *proper name*, and the whole matter of proper names is rather curious.

Proper names = words for particulars. Df.

I have put that down although, as far as common language goes, it is obviously false. It is true that if you try to think how you are to talk about particulars, you will see that you cannot ever talk about a particular particular except by means of a proper name. You cannot use general words except by way of description. How are you to express in words an atomic proposition? An atomic proposition is one which does mention actual particulars, not merely describe them but actually name them, and you can only name them by means of names. You can see at once for yourself, therefore, that every other part of speech except proper names is obviously quite incapable of standing for a particular. Yet it does seem a little odd if, having made a dot on the blackboard, I call it 'John'. You would be surprised, and yet how are you to know otherwise what it is that I am speaking of. If I say, 'The dot that is on the right-hand side is white' that is a proposition. If I say 'This is white' that is quite a different proposition. 'This' will do very well while we are all here and can see it, but if I wanted to talk about it to-morrow it would be convenient to have christened it and called it 'John'. There is no other way in which you can mention it. You cannot really mention *it* itself except by means of a name.

What pass for names in language, like 'Socrates', 'Plato', and so forth, were originally intended to fulfil this function of standing for particulars, and we do accept, in ordinary daily life, as particulars all sorts of things that really are not so. The names that we commonly use, like 'Socrates', are really abbreviations for descriptions; not only that, but what they describe are not particulars but

complicated systems of classes or series. A name, in the narrow logical sense of a word whose meaning is a particular, can only be applied to a particular with which the speaker is acquainted, because you cannot name anything you are not acquainted with. You remember, when Adam named the beasts, they came before him one by one, and he became acquainted with them and named them. We are not acquainted with Socrates, and therefore cannot name him. When we use the word 'Socrates', we are really using a description. Our thought may be rendered by some such phrase as, 'The Master of Plato', or 'The philosopher who drank the hemlock', or 'The person whom logicians assert to be mortal', but we certainly do not use the name as a name in the proper sense of the word.

That makes it very difficult to get any instance of a name at all in the proper strict logical sense of the word. The only words one does use as names in the logical sense are words like 'this' or 'that'. One can use 'this' as a name to stand for a particular with which one is acquainted at the moment. We say 'This is white'. If you agree that 'This is white', meaning the 'this' that you see, you are using 'this' as a proper name. But if you try to apprehend the proposition that I am expressing when I say 'This is white', you cannot do it. If you mean this piece of chalk as a physical object, then you are not using a proper name. It is only when you use 'this' quite strictly, to stand for an actual object of sense, that it is really a proper name. And in that it has a very odd property for a proper name, namely that it seldom means the same thing two moments running and does not mean the same thing to the speaker and to the hearer. It is an *ambiguous* proper name, but it is really a proper name all the same, and it is almost the only thing I can think of that is used properly and logically in the sense that I was talking of for a proper name. The importance of proper names, in the sense of which I am talking, is in the sense of logic, not of daily life. You can see why it is that in the logical language set forth in *Principia Mathematica* there are not any names, because there we are not interested in particular particulars but only in general particulars, if I may be allowed such a phrase.

Particulars have this peculiarity, among the sort of objects that you have to take account of in an inventory of the world, that each of them stands entirely alone and is completely self-subsistent. It

has that sort of self-subsistence that used to belong to substance, except that it usually only persists through a very short time, so far as our experience goes. That is to say, each particular that there is in the world does not in any way logically depend upon any other particular. Each one might happen to be the whole universe; it is a merely empirical fact that this is not the case. There is no reason why you should not have a universe consisting of one particular and nothing else. That is a peculiarity of particulars. In the same way, in order to understand a name for a particular, the only thing necessary is to be acquainted with that particular. When you are acquainted with that particular, you have a full, adequate, and complete understanding of the name, and no further information is required. No further information as to the facts that are true of that particular would enable you to have a fuller understanding of the meaning of the name.

*Discussion*

*Mr. Carr*: You think there are simple facts that are not complex. Are complexes all composed of simples? Are not the simples that go into complexes themselves complex?

*Mr. Russell*: No facts are simple. As to your second question, that is, of course, a question that might be argued—whether when a thing is complex it is necessary that it should in analysis have constituents that are simple. I think it is perfectly possible to suppose that complex things are capable of analysis *ad infinitum*, and that you never reach the simple. I do not think it is true, but it is a thing that one might argue, certainly. I do myself think that complexes—I do not like to talk of complexes—are composed of simples, but I admit that that is a difficult argument, and it might be that analysis could go on forever.

*Mr. Carr*: You do not mean that in calling the thing complex, you have asserted that there really are simples?

*Mr. Russell*: No, I do not think that is *necessarily* implied.

*Mr. Neville*: I do not feel clear that the proposition 'This is white' is in any case a simpler proposition than the proposition 'This and that have the same colour'.

*Mr. Russell*: That is one of the things I have not had time for. It may be the same as the proposition 'This and that have the same colour'. It may be that white is defined as the colour of 'this',

or rather that the proposition 'This is white' means 'This is identical in colour with that', the colour of 'that' being, so to speak, the definition of white. That may be, but there is no special reason to think that it is.

*Mr. Neville*: Are there any monadic relations which would be better examples?

*Mr. Russell*: I think not. It is perfectly obvious *a priori* that you can get rid of all monadic relations by that trick. One of the things I was going to say if I had had time was that you can get rid of dyadic and reduce to triadic, and so on. But there is no particular reason to suppose that that is the way the world begins, that it begins with relations of order *n* instead of relations of order 1. You cannot reduce them downward, but you can reduce them upward.

*Question*: If the proper name of a thing, a 'this', varies from instant to instant, how is it possible to make any argument?

*Mr. Russell*: You can keep 'this' going for about a minute or two. I made that dot and talked about it for some little time. I mean it varies often. If you argue quickly, you can get some little way before it is finished. I think things last for a finite time, a matter of some seconds or minutes or whatever it may happen to be.

*Question*: You do not think that air is acting on that and changing it?

*Mr. Russell*: It does not matter about that if it does not alter its appearance enough for you to have a different sense-datum.

# Part III

# Atomic and Molecular Propositions

I did not quite finish last time the syllabus that I intended for Lecture II, so I must first do that.

I had been speaking at the end of my last lecture on the subject of the self-subsistence of particulars, how each particular has its being independently of any other and does not depend upon anything else for the logical possibility of its existence. I compared particulars with the old conception of substance, that is to say, they have the quality of self-subsistence that used to belong to substance, but not the quality of persistence through time. A particular, as a rule, is apt to last for a very short time indeed, not an instant but a very short time. In that respect particulars differ from the old substances but in their logical position they do not. There is, as you know, a logical theory which is quite opposed to that view, a logical theory according to which, if you really understood any one thing, you would understand everything. I think that rests upon a certain confusion of ideas. When you have acquaintance with a particular, you understand that particular itself quite fully, independently of the fact that there are a great many propositions about it that you do not know, but propositions concerning the particular are not necessary to be known in order that you may know what the particular itself is. It is rather the other way round. In order to understand a proposition in which the name of a particular occurs, you must already be acquainted with that particular. The acquaintance with the simpler is presupposed in the understanding of the more complex, but the logic that I should wish to combat maintains that in order thoroughly to know any one thing, you must know all its relations and all its qualities, all the propositions in fact in which that thing is mentioned; and you deduce of course from that that the world is an interdependent whole. It is on a basis of that sort that the logic of monism develops. Generally one supports this theory by talking about the 'nature' of a thing, assuming that a thing has something which you call its 'nature' which is generally elaborately confounded and distinguished from the thing, so that you can get a comfortable seesaw which enables you to deduce whichever results suit the moment. The 'nature' of the thing would come to mean all the true propositions in which the thing is mentioned. Of course it is clear that since everything has relations to everything else, you cannot know all the facts of which a thing is a constituent without having some knowledge of everything in the universe. When you realize

that what one calls 'knowing a particular' merely means acquaintance with that particular and is presupposed in the understanding of any proposition in which that particular is mentioned. I think you also realize that you cannot take the view that the understanding of the name of the particular presupposes knowledge of all the propositions concerning that particular.

I should like to say about understanding, that that phrase is often used mistakenly. People speak of 'understanding the universe' and so on. But, of course, the only thing you can really understand (in the strict sense of the word) is a symbol, and to understand a symbol is to know what it stands for.

I pass on from particulars to predicates and relations and what we mean by understanding the words that we use for predicates and relations. A very great deal of what I am saying in this course of lectures consists of ideas which I derived from my friend Wittgenstein. But I have had no opportunity of knowing how far his ideas have changed since August 1914, nor whether he is alive or dead, so I cannot make any one but myself responsible for them.

Understanding a predicate is quite a different thing from understanding a name. By a predicate, as you know, I mean the word that is used to designate a quality such as red, white, square, round, and the understanding of a word like that involves a different kind of act of mind from that which is involved in understanding a name. To understand a name you must be acquainted with the particular of which it is a name, and you must know that it is the name of that particular. You do not, that is to say, have any suggestion of the form of a proposition, whereas in understanding a predicate you do. To understand 'red', for instance, is to understand what is meant by saying that a thing is red. You have to bring in the form of a proposition. You do not have to know, concerning any particular 'this', that 'This is red' but you have to know what is the meaning of saying that anything is red. You have to understand what one would call 'being red'. The importance of that is in connection with the theory of types, which I shall come to later on. It is in the fact that a predicate can never occur except as a predicate. When it seems to occur as a subject, the phrase wants amplifying and explaining, unless, of course, you are talking about the word itself. You may say " 'Red' is a predicate", but then you must have 'red' in inverted commas because you are talking about the word 'red'. When you understand 'red' it means that you understand propositions of the form that '$x$ is red'. So

that the understanding of a predicate is something a little more complicated than the understanding of a name, just because of that. Exactly the same applies to relations, and in fact all those things that are not particulars. Take, e.g., 'before' in '$x$ is before $y$': you understand 'before' when you understand what that would mean if $x$ and $y$ were given. I do not mean you know whether it is true, but you understand the proposition. Here again the same thing applies. A relation can never occur except as a relation, never as a subject. You will always have to put in hypothetical terms, if not real ones, such as 'If I say that $x$ is before $y$, I assert a relation between $x$ and $y$'. It is in this way that you will have to expand such a statement as '"Before" is a relation' in order to get its meaning.

The different sorts of words, in fact, have different sorts of uses and must be kept always to the right use and not to the wrong use, and it is fallacies arising from putting symbols to wrong uses that lead to the contradictions concerned with types.

There is just one more point before I leave the subjects I meant to have dealt with last time, and that is a point which came up in discussion at the conclusion of the last lecture, namely, that if you like you can get a formal reduction of (say) monadic relations to dyadic, or of dyadic to triadic, or of all the relations below a certain order to all above that order, but the converse reduction is not possible. Suppose one takes, for example, 'red'. One says, 'This is red', 'That is red', and so forth. Now, if anyone is of opinion that there is reason to try to get on without subject-predicate propositions, all that is necessary is to take some standard red thing and have a relation which one might call 'colour-likeness', sameness of colour, which would be a direct relation, not consisting in having a certain colour. You can then define the things which are red, as all the things that have colour-likeness to this standard thing. That is practically the treatment that Berkeley and Hume recommended, except that they did not recognize that they were reducing qualities to relations, but thought they were getting rid of 'abstract ideas' altogether. You can perfectly well do in that way a formal reduction of predicates to relations. There is no objection to that either empirically or logically. If you think it is worth while you can proceed in exactly the same way with dyadic relations, which you can reduce to triadic. Royce used to have a great affection for that process. For some reason he always liked triadic relations better than dyadic ones; he illustrated his prefer-

ence in his contributions to mathematical logic and the principles of geometry.

All that is possible. I do not myself see any particular point in doing it as soon as you have realized that it is possible. I see no particular reason to suppose that the simplest relations that occur in the world are (say) of order $n$, but there is no *a priori* reason against it. The converse reduction, on the other hand, is quite impossible except in certain special cases where the relation has some special properties. For example, dyadic relations can be reduced to sameness of predicate when they are symmetrical and transitive. Thus, e.g., the relation of colour-likeness will have the property that if $A$ has exact colour-likeness with $B$ and $B$ with $C$, then $A$ has exact colour-likeness with $C$; and if $A$ has it with $B$, $B$ has it with $A$. But the case is otherwise with asymmetrical relations.

Take for example '$A$ is greater than $B$'. It is obvious that '$A$ is greater than $B$' does not consist in $A$ and $B$ having a common predicate, for if it did it would require that $B$ should also be greater than $A$. It is also obvious that it does not consist merely in their having different predicates, because if $A$ has a different predicate from $B$, $B$ has a different predicate from $A$, so that in either case, whether of sameness or difference of predicate, you get a symmetrical relation. For instance, if $A$ is of a different colour from $B$, $B$ is of a different colour from $A$. Therefore when you get symmetrical relations, you have relations which it is formally possible to reduce to either sameness of predicate or difference of predicate, but when you come to asymmetrical relations there is no such possibility. This impossibility of reducing dyadic relations to sameness or difference of predicate is a matter of a good deal of importance in connection with traditional philosophy, because a great deal of traditional philosophy depends upon the assumption that every proposition really is of the subject-predicate form, and that is certainly not the case. That theory dominates a great part of traditional metaphysics and the old idea of substance and a good deal of the theory of the Absolute, so that that sort of logical outlook which had its imagination dominated by the theory that you could always express a proposition in a subject-predicate form has had a very great deal of influence upon traditional metaphysics.

That is the end of what I ought to have said last time, and I come on now to the proper topic of to-day's lecture, that is *molecular* propositions. I call them molecular propositions because

they contain other propositions which you may call their atoms, and by molecular propositions I mean propositions having such words as 'or', 'if', 'and', and so forth. If I say, 'Either to-day is Tuesday, or we have all made a mistake in being here', that is the sort of proposition that I mean that is molecular. Or if I say, 'If it rains, I shall bring my umbrella', that again is a molecular proposition because it contains the two parts 'It rains' and 'I shall being my umbrella'. If I say, 'It did rain and I did bring my umbrella', that again is a molecular proposition. Or if I say, 'The supposition of its raining is incompatible with the supposition of my not bringing my umbrella', that again is a molecular proposition. There are various propositions of that sort, which you can complicate *ad infinitum.* They are built up out of propositions related by such words as 'or', 'if', 'and', and so on. You remember that I defined an atomic proposition as one which contains a single verb. Now there are two different lines of complication in proceeding from these to more complex propositions. There is the line that I have just been talking about, where you proceed to molecular propositions, and there is another line which I shall come to in a later lecture, where you have not two related propositions, but one proposition containing two or more verbs. Examples are got from believing, wishing, and so forth. 'I believe Socrates is mortal.' You have there two verbs, 'believe' and 'is'. Or 'I wish I were immortal'. Anything like that where you have a wish or a belief or a doubt involves two verbs. A lot of psychological attitudes involve two verbs, not, as it were, crystallized out, but two verbs within the one unitary proposition. But I am talking to-day about molecular propositions and you will understand that you can make propositions with 'or' and 'and' and so forth, where the constituent propositions are not atomic, but for the moment we can confine ourselves to the case where the constituent propositions are atomic. When you take an atomic proposition, or one of these propositions like 'believing', when you take any proposition of that sort, there is just one fact which is pointed to by the proposition, pointed to either truly or falsely. The essence of a proposition is that it can correspond in two ways with a fact, in what one may call the true way or the false way. You might illustrate it in a picture like this:

True: $\overrightarrow{\text{Prop.}}$ Fact

False: Fact $\overrightarrow{\text{Prop.}}$

Supposing you have the proposition 'Socrates is mortal', either there would be the fact that Socrates is mortal or there would be the fact that Socrates is not mortal. In the one case it corresponds in a way that makes the proposition true, in the other case in a way that makes the proposition false. That is one way in which a proposition differs from a name.

There are, of course, two propositions corresponding to every fact, one true and one false. There are no false facts, so you cannot get one fact for every proposition but only for every pair of propositions. All that applies to atomic propositions. But when you take such a proposition as '$p$ or $q$', 'Socrates is mortal or Socrates is living still', there you will have two different facts involved in the truth or the falsehood of your proposition '$p$ or $q$'. There will be the fact that corresponds to $p$ and there will be the fact that corresponds to $q$, and both of those facts are relevant in discovering the truth or falsehood of '$p$ or $q$'. I do not suppose there is in the world a single disjunctive fact corresponding to '$p$ or $q$'. It does not look plausible that in the actual objective world there are facts going about which you could describe as '$p$ or $q$', but I would not lay too much stress on what strikes one as plausible: it is not a thing you can rely on altogether. For the present I do not think any difficulties will arise from the supposition that the truth or falsehood of this proposition '$p$ or $q$' does not depend upon a single objective fact which is disjunctive but depends on the two facts one of which corresponds to $p$ and the other to $q$: $p$ will have a fact corresponding to it and $q$ will have a fact corresponding to it. That is to say, the truth or falsehood of this proposition '$p$ or $q$' depends upon two facts and not upon one, as $p$ does and as $q$ does. Generally speaking, as regards these things that you make up out of two propositions, the whole of what is necessary in order to know their meaning is to know under what circumstances they are true, given the truth or falsehood of $p$ and the truth or falsehood of $q$. That is perfectly obvious. You have as a schema, for '$p$ or $q$',
using '$TT$' for '$p$ and $q$ both true'
'$TF$' for '$p$ true and $q$ false', etc.,

| $TT$ | $TF$ | $FT$ | $FF$ |
|---|---|---|---|
| $T$ | $T$ | $T$ | $F$ |

where the bottom line states the truth or the falsehood of '$p$ or $q$'. You must not look about the real world for an object which you

can call 'or', and say, 'Now, look at this. This is "or".' There is no such thing, and if you try to analyse '$p$ or $q$' in that way you will get into trouble. But the meaning of disjunction will be entirely explained by the above schema.

I call these things truth-functions of propositions, when the truth or falsehood of the molecular proposition depends only on the truth or falsehood of the propositions that enter into it. The same applies to '$p$ and $q$' and 'if $p$ then $q$' and '$p$ is incompatible with $q$'. When I say '$p$ is incompatible with $q$' I simply mean to say that they are not both true. I do not mean any more. Those sorts of things are called truth-functions, and these molecular propositions that we are dealing with to-day are instances of truth-functions. If $p$ is a proposition, the statement that 'I believe $p$' does not depend for its truth or falsehood, simply upon the truth or falsehood of $p$, since I believe some but not all true propositions and some but not all false propositions.

I just want to give you a little talk about the way these truth-functions are built up. You can build up all these different sorts of truth-functions out of one source, namely '$p$ is incompatible with $q$', meaning by that that they are not both true, that one at least of them is false.

We will denote '$p$ is incompatible with $q$' by $p/q$.

Take for instance $p/p$, i.e., '$p$ is incompatible with itself'. In that case clearly $p$ will be false, so that you can take '$p/p$' as meaning '$p$ is false', i.e., $p/p = \text{not } p$. The meaning of molecular propositions is entirely determined by their truth-schema and there is nothing more in it than that, so that when you have got two things of the same truth-schema you can identify them.

Suppose you want 'if $p$ then $q$', that simply means that you cannot have $p$ without having $q$, so that $p$ is incompatible with the falsehood of $q$. Thus,

$$\text{'If } p \text{ then } q\text{'} = p/(q/q).$$

When you have that, it follows of course at once that if $p$ is true, $q$ is true, because you cannot have $p$ true and $q$ false.

Suppose you want '$p$ or $q$', that means that the falsehood of $p$ is incompatible with the falsehood of $q$. If $p$ is false, $q$ is not false, and vice versa. That will be

$$(p/p)/(q/q).$$

Suppose you want '$p$ and $q$ are both true'. That will mean that $p$ is not incompatible with $q$. When $p$ and $q$ are both true, it is not the case that at least one of them is false. Thus,

$$\text{'}p \text{ and } q \text{ are both true'} = (p/q)/(p/q).$$

The whole of the logic of deduction is concerned simply with complications and developments of this idea. This idea of incompatibility was first shown to be sufficient for the purpose by Mr. Sheffer, and there was a good deal of work done subsequently by M. Nicod. It is a good deal simpler when it is done this way than when it is done in the way of *Principia Mathematica*, where there are two primitive ideas to start with, namely 'or' and 'not'. Here you can get on with only a single premise for deduction. I will not develop this subject further because it takes you right into mathematical logic.

I do not see any reason to suppose that there is a complexity in the facts corresponding to these molecular propositions, because, as I was saying, the correspondence of a molecular proposition with facts is of a different sort from the correspondence of an atomic proposition with a fact. There is one special point that has to be gone into in connexion with this, that is the question: Are there negative facts? Are there such facts as you might call the fact that 'Socrates is not alive'? I have assumed in all that I have said hitherto that there are negative facts, that for example if you say 'Socrates is alive', there is corresponding to that proposition in the real world the fact that Socrates is not alive. One has a certain repugnance to negative facts, the same sort of feeling that makes you wish not to have a fact '$p$ or $q$' going about the world. You have a feeling that there are only positive facts, and that negative propositions have somehow or other got to be expressions of positive facts. When I was lecturing on this subject at Harvard* I argued that there were negative facts, and it nearly produced a riot: the class would not hear of there being negative facts at all. I am still inclined to think that there are. However, one of the men to whom I was lecturing at Harvard, Mr. Demos, subsequently wrote an article in *Mind* to explain why there are no negative facts. It is in *Mind* for April, 1917. I think he makes

* [In 1914—R.C.M.]

as good a case as can be made for the view that there are no negative facts. It is a difficult question. I really only ask that you should not dogmatize. I do not say positively that there are, but there may be.

There are certain things you can notice about negative propositions. Mr. Demos points out, *first* of all, that a negative proposition is not in any way dependent on a cognitive subject for its definition. To this I agree. Suppose you say, when I say 'Socrates is not alive', I am merely expressing disbelief in the proposition that Socrates is alive. You have got to find something or other in the real world to make this disbelief true, and the only question is what. That is his *first* point.

His *second* is that a negative proposition must not be taken at its face value. You cannot, he says, regard the statement 'Socrates is not alive' as being an expression of a fact in the same sort of direct way in which 'Socrates is human' would be an expression of a fact. His argument for that is solely that he cannot believe that there are negative facts in the world. He maintains that there cannot be in the real world such facts as 'Socrates is not alive', taken, i.e., as simple facts, and that therefore you have got to find some explanation of negative propositions, some interpretation, and that they cannot be just as simple as positive propositions. I shall come back to that point, but on this I do not feel inclined to agree.

His *third* point I do not entirely agree with: that when the word 'not' occurs, it cannot be taken as a qualification of the predicate. For instance, if you say that 'This is not red', you might attempt to say that 'not-red' is a predicate, but that of course won't do; in the first place because a great many propositions are not expressions of predicates; in the second place because the word 'not' applies to the whole proposition. The proper expression would be 'not: this is red'; the 'not' applies to the whole proposition 'this is red', and of course in many cases you can see that quite clearly. If you take a case I took in discussing descriptions: 'The present king of France is not bald', and if you take 'not-bald' as a predicate, that would have to be judged false on the ground that there is not a present king of France. But it is clear that the proposition 'The present king of France is bald' is a false proposition, and therefore the negative of that will have to be a true proposition, and that could not be the case if you take 'not-bald'

as a predicate, so that in all cases where a 'not' comes in, the 'not' has to be taken to apply to the whole proposition. 'Not-*p*' is the proper formula.

We have come now to the question, how are we really to interpret 'not-*p*', and the suggestion offered by Mr. Demos is that when we assert 'not-*p*' we are really asserting that there is some proposition *q* which is true and is incompatible with *p* ('an opposite of *p*' is his phrase, but I think the meaning is the same). That is his suggested definition:

'not-*p*' means 'There is a proposition *q* which is true and is incompatible with *p*.'

As, e.g., if I say 'This chalk is not red', I shall be meaning to assert that there is some proposition, which in this case would be the proposition 'This chalk is white', which is inconsistent with the proposition 'It is red', and that you use these general negative forms because you do not happen to know what the actual proposition is that is true and is incompatible with *p*. Or, of course, you may possibly know what the actual proposition is, but you may be more interested in the fact that *p* is false than you are in the particular example which makes it false. As, for instance, you might be anxious to prove that someone is a liar, and you might be very much interested in the falsehood of some proposition which he had asserted. You might also be more interested in the general proposition than in the particular case, so that if someone had asserted that that chalk was red, you might be more interested in the fact that it was not red than in the fact that it was white.

I find it very difficult to believe that theory of falsehood. You will observe that in the first place there is this objection, that it makes incompatibility fundamental and an objective fact, which is not so very much simpler than allowing negative facts. You have got to have here 'That *p* is incompatible with *q*' in order to reduce 'not' to incompatibility, because this has got to be the corresponding fact. It is perfectly clear, whatever may be the interpretation of 'not', that there is *some* interpretation which will give you a fact. If I say 'There is not a hippopotamus in this room', it is quite clear there is some way of interpreting that statement according to which there is a corresponding fact, and the fact

cannot be merely that every part of this room is filled up with something that is not a hippopotamus. You would come back to the necessity for some kind or other of fact of the sort that we have been trying to avoid. We have been trying to avoid both negative facts and molecular facts, and all that this succeeds in doing is to substitute molecular facts for negative facts, and I do not consider that that is very successful as a means of avoiding paradox, especially when you consider this, that even if incompatibility is to be taken as a sort of fundamental expression of fact, incompatibility is not between facts but between propositions. If I say '*p* is incompatible with *q*', one at least of *p* and *q* has got to be false. It is clear that no two *facts* are incompatible. The incompatibility holds *between the propositions*, between the *p* and the *q*, and therefore if you are going to take incompatibility as a fundamental fact, you have got, in explaining negatives, to take as your fundamental fact something involving propositions as opposed to facts. It is quite clear that propositions are not what you might call 'real'. If you were making an inventory of the world, propositions would not come in. Facts would, beliefs, wishes, wills would, but propositions would not. They do not have being independently, so that this incompatibility of propositions taken as an ultimate fact of the real world will want a great deal of treatment, a lot of dressing up before it will do. Therefore as a simplification to avoid negative facts, I do not think it really is very successful. I think you will find that it is simpler to take negative facts as facts, to assume that 'Socrates is not alive' is really an objective fact in the same sense in which 'Socrates is human' is a fact. This theory of Mr. Demos's that I have been setting forth here is a development of the one one hits upon at once when one tries to get round negative facts, but for the reasons that I have given, I do not think it really answers to take things that way, and I think you will find that it is better to take negative facts as ultimate. Otherwise you will find it so difficult to say what it is that corresponds to a proposition. When, e.g., you have a false positive proposition, say 'Socrates is alive', it is false because of a fact in the real world. A thing cannot be false except because of a fact, so that you find it extremely difficult to say what exactly happens when you make a positive assertion that is false, unless you are going to admit negative facts. I think

all those questions are difficult and there are arguments always to be adduced both ways, but on the whole I do incline to believe that there are negative facts and that there are not disjunctive facts. But the denial of disjunctive facts leads to certain difficulties which we shall have to consider in connexion with general propositions in a later lecture.

*Discussion*

*Question*: Do you consider that the proposition 'Socrates is dead' is a positive or a negative fact?

*Mr. Russell*: It is partly a negative fact. To say that a person is dead is complicated. It is two statements rolled into one: 'Socrates was alive' and 'Socrates is not alive'.

*Question*: Does putting the 'not' into it give it a formal character of negative and vice versa?

*Mr. Russell*: No, I think you must go into the meaning of words.

*Question*: I should have thought there was a great difference between saying that 'Socrates is alive' and saying that 'Socrates is not a living man'. I think it is possible to have what one might call a negative existence and that things exist of which we cannot take cognizance. Socrates undoubtedly did live but he is no longer in the condition of living as a man.

*Mr. Russell*: I was not going into the question of existence after death but simply taking words in their everyday signification.

*Question*: What is precisely your test as to whether you have got a positive or negative proposition before you?

*Mr. Russell*: There is no formal test.

*Question*: If you had a formal test, would it not follow that you would know whether there were negative facts or not?

*Mr. Russell*: No, I think not. In the perfect logical language that I sketched in theory, it would always be obvious at once whether a proposition was positive or negative. But it would not bear upon how you are going to interpret negative propositions.

*Question*: Would the existence of negative facts ever be anything more than a mere definition?

*Mr. Russell*: Yes, I think it would. It seems to me that the business of metaphysics is to describe the world, and it is in my opinion a real definite question whether in a complete description of the world you would have to mention negative facts or not.

*Question*: How do you define a negative fact?

*Mr. Russell*: You could not give a general definition if it is right that negativeness is an ultimate.

# Part IV

## Propositions and Facts with more than one Verb: Beliefs, etc.

## IV. PROPOSITIONS AND FACTS WITH MORE THAN ONE VERB; BELIEFS, ETC.

You will remember that after speaking about atomic propositons I pointed out two more complicated forms of propositions which arise immediately on proceeding further than that: the *first*, which I call molecular propositions, which I dealt with last time, involving such words as 'or', 'and', 'if', and the *second* involving two or more verbs such as believing, wishing, willing, and so forth. In the case of molecular propositions it was not clear that we had to deal with any new form of fact, but only with a new form of proposition, i.e., if you have a disjunctive proposition such as '$p$ or $q$' it does not seem very plausible to say there there is in the world a disjunctive fact corresponding to '$p$ or $q$' but merely that there is a fact corresponding to $p$ and a fact corresponding to $q$, and the disjunctive proposition derives its truth or falsehood from those two separate facts. Therefore in that case one was dealing only with a new form of proposition and not with a new form of fact. To-day we have to deal with a new form of fact.

I think one might describe philosophical logic, the philosophical portion of logic which is the portion that I am concerned with in these lectures since Christmas (1917), as an inventory, or if you like a more humble word, a 'zoo' containing all the different forms that facts may have. I should prefer to say 'forms of facts' rather than 'forms of propositions'. To apply that to the case of molecular propositions which I dealt with last time, if one were pursuing this analysis of the forms of facts, it would be *belief in* a molecular proposition that one would deal with rather than the molecular proposition itself. In accordance with the sort of realistic bias that I should put into all study of metaphysics, I should always wish to be engaged in the investigation of some actual fact or set of facts, and it seems to me that that is so in logic just as much as it is in zoology. In logic you are concerned with the forms of facts, with getting hold of the different sorts of

facts, different *logical* sorts of facts, that there are in the world. Now I want to point out to-day that the facts that occur when one believes or wishes or wills have a different logical form from the atomic facts containing a single verb which I dealt with in my second lecture. (There are, of course, a good many forms that facts may have, a strictly infinite number, and I do not wish you to suppose that I pretend to deal with all of them.) Suppose you take any actual occurrence of a belief. I want you to understand that I am not talking about beliefs in the sort of way in which judgment is spoken of in theory of knowledge, in which you would say there is *the* judgment that two and two are four. I am talking of the actual occurrence of a belief in a particular person's mind at a particular moment, and discussing what sort of a fact that is. If I say 'What day of the week is this?' and you say 'Tuesday', there occurs in your mind at that moment the belief that this is Tuesday. The thing I want to deal with to-day is the question. What is the form of the fact which occurs when a person has a belief. Of course you see that the sort of obvious first notion that one would naturally arrive at would be that a belief is a relation to the proposition. 'I believe the proposition *p*'. 'I believe that to-day is Tuesday'. 'I believe that two and two are four'. Something like that. It seems on the face of it as if you had there a relation of the believing subject to a proposition. That view won't do for various reasons which I shall go into. But you have therefore got to have a theory of belief which is not exactly that. Take any sort of proposition, say 'I believe Socrates is mortal'. Suppose that that belief does actually occur. The statement that it occurs is a statement of fact. You have there two verbs. You may have more than two verbs, you may have any number greater than one. I may believe that Jones is of the opinion that Socrates is mortal. There you have more than two verbs. You may have any number, but you cannot have less than two. You will perceive that it is not only the proposition that has the two verbs, but also the fact, which is expressed by the proposition, has two constituents corresponding to verbs. I shall call those constituents verbs for the sake of shortness, as it is very difficult to find any word to describe all those objects which one denotes by verbs. Of course, that is strictly using the word 'verb' in two different senses, but I do not think it can lead to any confusion if you understand that

it is being so used. This fact (the belief) is one fact. It is not like what you had in molecular propositions where you had (say) '$p$ or $q$'. It is just one single fact that you have a belief. That is obvious from the fact that you can believe a falsehood. It is obvious from the fact of false belief that you cannot cut off one part: you cannot have

I believe/Socrates is mortal.

There are certain questions that arise about such facts, and the first that arises is, Are they undeniable facts or can you reduce them in some way to relations of other facts? Is it really necessary to suppose that there are irreducible facts, of which that sort of thing is a verbal expression? On that question until fairly lately I should certainly not have supposed that any doubt could arise. It had not really seemed to me until fairly lately that that was a debatable point. I still believe that there are facts of that form, but I see that it is a substantial question that needs to be discussed.

1. *Are beliefs, etc., irreducible facts?*

'Etc.' covers understanding a proposition; it covers desiring, willing, any other attitude of that sort that you may think of that involves a proposition. It seems natural to say one believes a proposition and unnatural to say one desires a proposition, but as a matter of fact that is only a prejudice. What you believe and what you desire are of exactly the same nature. You may desire to get some sugar to-morrow and of course you may possibly believe that you will. I am not sure that the logical form is the same in the case of will. I am inclined to think that the case of will is more analogous to that of perception, in going direct to facts, and excluding the possibility of falsehood. In any case desire and belief are of exactly the same form logically.

Pragmatists and some of the American realists, the school whom one calls neutral monists, deny altogether that there is such a phenomenon as belief in the sense I am dealing with. They do not deny it in words, they do not use the same sort of language that I am using, and that makes it difficult to compare their views with the views I am speaking about. One has really to translate what they say into language more or less analogous to ours before one can make out where the points of contact or difference are.

If you take the works of James in his *Essays in Radical Empiricism* or Dewey in his *Essays in Experimental Logic* you will find that they are denying altogether that there is such a phenomenon as belief in the sense I am talking of. They use the word 'believe' but they mean something different. You come to the view called 'behaviourism', according to which you mean, if you say a person believes a thing, that he behaves in a certain fashion; and that hangs together with James's pragmatism. James and Dewey would say: when I believe a proposition, that *means* that I act in a certain fashion, that my behaviour has certain characteristics, and my belief is a true one if the behaviour leads to the desired result and is a false one if it does not. That, if it is true, makes their pragmatism a perfectly rational account of truth and falsehood, if you do accept their view that belief as an isolated phenomenon does not occur. That is therefore the first thing one has to consider. It would take me too far from logic to consider that subject as it deserves to be considered, because it is a subject belonging to psychology, and it is only relevant to logic in this one way that it raises a doubt whether there are any facts having the logical form that I am speaking of. In the question of this logical form that involves two or more verbs you have a curious interlacing of logic with empirical studies, and of course that may occur elsewhere, in this way, that an empirical study gives you an example of a thing having a certain logical form, and you cannot really be sure that there are things having a given logical form except by finding an example, and the finding of an example is itself empirical. Therefore in that way empirical facts are relevant to logic at certain points. I think theoretically one might know that there were those forms without knowing any instance of them, but practically, situated as we are, that does not seem to occur. Practically, unless you can find an example of the form you won't know that there is that form. If I cannot find an example containing two or more verbs, you will not have reason to believe in the theory that such a form occurs.

When you read the works of people like James and Dewey on the subject of belief, one thing that strikes you at once is that the sort of thing they are thinking of as the object of belief is quite different from the sort of thing I am thinking of. They think of it always as a thing. They think you believe in God or Homer: you

believe in an object. That is the picture they have in their minds. It is common enough, in common parlance, to talk that way, and they would say, the first crude approximation that they would suggest would be that you believe truly when there is such an object and that you believe falsely when there is not. I do not mean they would say that exactly, but that would be the crude view from which they would start. They do not seem to have grasped the fact that the objective side in belief is better expressed by a proposition than by a single word, and that, I think, has a great deal to do with their whole outlook on the matter of what belief consists of. The object of belief in their view is generally, not relations between things, or things having qualities, or what not, but just single things which may or may not exist. That view seems to me radically and absolutely mistaken. In the *first* place there are a great many judgments you cannot possibly fit into that scheme, and in the *second* place it cannot possibly give any explanation to false beliefs, because when you believe that a thing exists and it does not exist, the thing is not there, it is nothing, and it cannot be the right analysis of a false belief to regard it as a relation to what is really nothing. This is an objection to supposing that belief consists simply in relation to the object. It is obvious that if you say 'I believe in Homer' and there was no such person as Homer, your belief cannot be a relation to Homer, since there is no 'Homer'. Every fact that occurs in the world must be composed entirely of constituents that there are, and not of constituents that there are not. Therefore when you say 'I believe in Homer' it cannot be the right analysis of the thing to put it like that. What the right analysis is I shall come on to in the theory of descriptions. I come back now to the theory of behaviourism which I spoke of a moment ago. Suppose, e.g., that you are said to believe that there is a train at 10.25. This means, we are told, that you start for the station at a certain time. When you reach the station you see it is 10.24 and you run. That behaviour constitutes your belief that there is a train at that time. If you catch your train by running, your belief was true. If the train went at 10.23, you miss it, and your belief was false. That is the sort of thing that they would say constitutes belief. There is not a single state of mind which consists in contemplating this eternal verity, that the train starts at 10.25. They would apply that even to the most

abstract things. I do not myself feel that that view of things is tenable. It is a difficult one to refute because it goes very deep and one has the feeling that perhaps, if one thought it out long enough and became sufficiently aware of all its implications, one might find after all that it was a feasible view; but yet I do not *feel* it feasible. It hangs together, of course, with the theory of neutral monism, with the theory that the material constituting the mental is the same as the material constituting the physical, just like the Post Office directory which gives you people arranged geographically and alphabetically. This whole theory hangs together with that. I do not mean necessarily that all the people that profess the one profess the other, but that the two do essentially belong together. If you are going to take that view, you have to explain away belief and desire, because things of that sort do seem to be mental phenomena. They do seem rather far removed from the sort of thing that happens in the physical world. Therefore people will set to work to explain away such things as belief, and reduce them to bodily behaviour; and your belief in a certain proposition will consist in the behaviour of your body. In the crudest terms that is what that view amounts to. It does enable you to get on very well without mind. Truth and falsehood in that case consist in the relation of your bodily behaviour to a certain fact, the sort of distant fact which is the purpose of your behaviour, as it were, and when your behaviour is satisfactory in regard to that fact your belief is true, and when your behaviour is unsatisfactory in regard to that fact your belief is false. The logical essence, in that view, will be a relation between two facts having the same sort of form as a causal relation, i.e., on the one hand there will be your bodily behaviour which is one fact, and on the other hand the fact that the train starts at such and such a time, which is another fact, and out of a relation of those two the whole phenomenon is constituted. The thing you will get will be logically of the same form as you have in cause, where you have 'This fact causes that fact'. It is quite a different logical form from the facts containing two verbs that I am talking of to-day.

I have naturally a bias in favour of the theory of neutral monism because it exemplifies Occam's razor. I always wish to get on in philosophy with the smallest possible apparatus, partly because it diminishes the risk of error, because it is not necessary to deny

the entities you do not assert, and therefore you run less risk of error the fewer entities you assume. The other reason—perhaps a somewhat frivolous one—is that every diminution in the number of entities increases the amount of work for mathematical logic to do in building up things that look like the entities you used to assume. Therefore the whole theory of neutral monism is pleasing to me, but I do find so far very great difficulty in believing it. You will find a discussion of the whole question in some articles I wrote in *The Monist*,* especially in July 1914, and in the two previous numbers also. I should really want to rewrite them rather because I think some of the arguments I used against neutral monism are not valid. I place most reliance on the argument about 'emphatic particulars', 'this', 'I', all that class of words, that pick out certain particulars from the universe by their relation to oneself, and I think by the fact that they, or particulars related to them, are present to you at the moment of speaking. 'This', of course, is what I call an 'emphatic particular'. It is simply a proper name for the present object of attention, a proper name, meaning nothing. It is ambiguous, because, of course, the object of attention is always changing from moment to moment and from person to person. I think it is extremely difficult, if you get rid of consciousness altogether, to explain what you mean by such a word as 'this', what it is that makes the absence of impartiality. You would say that in a purely physical world there would be a complete impartiality. All parts of time and all regions of space would seem equally emphatic. But what really happens is that we pick out certain facts, past and future and all that sort of thing; they all radiate out from 'this', and I have not myself seen how one can deal with the notion of 'this' on the basis of neutral monism. I do not lay that down dogmatically, only I do not see how it can be done. I shall assume for the rest of this lecture that there are such facts as beliefs and wishes and so forth. It would take me really the whole of my course to go into the question fully. Thus we come back to more purely logical questions from this excursion into psychology, for which I apologize.

2. *What is the status of* p *in 'I believe* p'?

You cannot say that you believe *facts*, because your beliefs are

*[The three parts of this essay are the fifth paper in this collection.—R.C.M.]

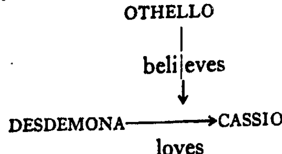
sometimes wrong. You can say that you *perceive* facts, because perceiving is not liable to error. Wherever it is facts alone that are involved, error is impossible. Therefore you cannot say you believe facts. You have to say that you believe propositions. The awkwardness of that is that obviously propositions are nothing. Therefore that cannot be the true account of the matter. When I say 'Obviously propositions are nothing' it is not perhaps quite obvious. Time was when I thought there were propositions, but it does not seem to me very plausible to say that in addition to facts there are also these curious shadowy things going about such as 'That to-day is Wednesday' when in fact it is Tuesday. I cannot believe they go about the real world. It is more than one can manage to believe, and I do think no person with a vivid sense of reality can imagine it. One of the difficulties of the study of logic is that it is an exceedingly abstract study dealing with the most abstract things imaginable, and yet you cannot pursue it properly unless you have a vivid instinct as to what is real. You must have that instinct rather well developed in logic. I think otherwise you will get into fantastic things. I think Meinong is rather deficient in just that instinct for reality. Meinong maintains that there is such an object as the round square only it does not exist, and it does not even subsist, but nevertheless there is such an object, and when you say 'The round square is a fiction', he takes it that there is an object 'the round square' and there is a predicate 'fiction'. No one with a sense of reality would so analyse that proposition. He would see that the proposition wants analysing in such a way that you won't have to regard the round square as a constituent of that proposition. To suppose that in the actual world of nature there is a whole set of false propositions going about is to my mind monstrous. I cannot bring myself to suppose it. I cannot believe that they are there in the sense in which facts are there. There seems to me something about the fact that 'To-day is Tuesday' on a different level of reality from the supposition 'That to-day is Wednesday'. When I speak of the proposition 'That to-day is Wednesday' I do not mean the occurrence in future of a state of mind in which you think it is Wednesday, but I am talking about the theory that there is something quite logical, something not involving mind in any way; and such a thing as that I do not think you can take a false proposition to be. I think a false proposition

must, wherever it occurs, be subject to analyses, be taken to pieces, pulled to bits, and shown to be simply separate pieces of one fact in which the false proposition has been analysed away. I say that simply on the ground of what I should call an instinct of reality. I ought to say a word or two about 'reality'. It is a vague word, and most of its uses are improper. When I talk about reality as I am now doing, I can explain best what I mean by saying that I mean everything you would have to mention in a complete description of the world; that will convey to you what I mean. Now I do *not* think that false propositions would have to be mentioned in a complete description of the world. False beliefs would, of course, false suppositions would, and desires for what does not come to pass, but not false propositions all alone, and therefore when you, as one says, believe a false proposition, that cannot be an accurate account of what occurs. It is not accurate to say 'I believe the proposition $p$' and regard the occurrence as a twofold relation between me and $p$. The logical form is just the same whether you believe a false or a true proposition. Therefore in all cases you are not to regard belief as a two-term relation between yourself and a proposition, and you have to analyse up the proposition and treat your belief differently. Therefore the belief does not really contain a proposition as a constituent but only contains the constituents of the proposition as constituents. You cannot say when you believe, 'What is it that you believe?' There is no answer to that question, i.e., there is not a single thing that you are believing. 'I believe that to-day is Tuesday.' You must not suppose that 'That to-day is Tuesday' is a single object which I am believing. That would be an error. That is not the right way to analyse the occurrence, although that analysis is linguistically convenient, and one may keep it provided one knows that it is not the truth.

3. *How shall we describe the logical form of a belief?*

I want to try to get an account of the way that a belief is made up. That is not an easy question at all. You cannot make what I should call a map-in-space of a belief. You can make a map of an atomic fact but not of a belief, for the simple reason that space-relations always are of the atomic sort or complications of the atomic sort. I will try to illustrate what I mean. The point is in

connexion with there being two verbs in the judgment and with the fact that both verbs have got to occur as verbs, because if a thing is a verb it cannot occur otherwise than as a verb. Suppose I take '*A* believes that *B* loves *C*'. 'Othello believes that Desdemona loves Cassio.' There you have a false belief. You have this odd state of affairs that the verb 'loves' occurs in that proposition and seems to occur as relating Desdemona to Cassio whereas in fact it does not do so, but yet it does occur as a verb, it does occur in the sort of way that a verb should do. I mean that when *A* believes that *B* loves *C*, you have to have a verb in the place where 'loves' occurs. You cannot put a substantive in its place. Therefore it is clear that the subordinate verb (i.e., the verb other than believing) is functioning as a verb, and seems to be relating two terms, but as a matter of fact does not when a judgment happens to be false. That is what constitutes the puzzle about the nature of belief. You will notice that wherever one gets to really close quarters with the theory of error one has the puzzle of how to deal with error without assuming the existence of the non-existent. I mean that every theory of error sooner or later wrecks itself by assuming the existence of the non-existent. As when I say 'Desdemona loves Cassio', it seems as if you have a non-existent love between Desdemona and Cassio, but that is just as wrong as a non-existent unicorn. So you have to explain the whole theory of judgment in some other way. I come now to this question of a map. Suppose you try such a map as this:




This question of making a map is not so strange as you might suppose because it is part of the whole theory of symbolism. It is important to realize where and how a symbolism of that sort would be wrong: where and how it is wrong is that in the symbol you have this relationship relating these two things and in the fact it doesn't really relate them. You cannot get in space any occurrence which is logically of the same form as belief. When I say 'logically of the same form' I mean that one can be obtained from

the other by replacing the constituents of the one by the new terms. If I say 'Desdemona loves Cassio' that is of the same form as '*A* is to the right of *B*'. Those are of the same form, and I say that nothing that occurs in space is of the same form as belief. I have got on here to a new sort of thing, a new beast for our zoo, not another member of our former species but a new species. The discovery of this fact is due to Mr. Wittgenstein.

There is a great deal that is odd about belief from a logical point of view. One of the things that are odd is that you can believe propositions of all sorts of forms. I can believe that 'This is white' and that 'Two and two are four'. They are quite different forms, yet one can believe both. The actual occurrence can hardly be of exactly the same logical form in those two cases because of the great difference in the forms of the propositions believed. Therefore it would seem that belief cannot strictly be logically one in all different cases but must be distinguished according to the nature of the proposition that you believe. If you have 'I believe *p*' and 'I believe *q*' those two facts, if *p* and *q* are not of the same logical form, are not of the same logical form in the sense I was speaking of a moment ago, that is in the sense that from 'I believe *p*' you can derive 'I believe *q*' by replacing the constituents of one by the constituents of the other. That means that belief itself cannot be treated as being a proper sort of single term. Belief will really have to have different logical forms according to the nature of what is believed. So that the apparent sameness of believing in different cases is more or less illusory.

There are really two main things that one wants to notice in this matter that I am treating of just now. The *first* is the impossibility of treating the proposition believed as an independent entity, entering as a unit into the occurrence of the belief, and the *other* is the impossibility of putting the subordinate verb on a level with its terms as an object term in the belief. That is a point in which I think that the theory of judgment which I set forth once in print some years ago was a little unduly simple, because I did then treat the object verb as if one could put it as just an object like the terms, as if one could put 'loves' on a level with Desdemona and Cassio as a term for the relation 'believe'. That is why I have been laying such an emphasis in this lecture to-day on the fact that there are two verbs at least. I hope you will forgive the fact that so much of

what I say to-day is tentative and consists of pointing out difficulties. The subject is not very easy and it has not been much dealt with or discussed. Practically nobody has until quite lately begun to consider the problem of the nature of belief with anything like a proper logical apparatus and therefore one has very little to help one in any discussion and so one has to be content on many points at present with pointing out difficulties rather than laying down quite clear solutions.

4. *The question of nomenclature.*

What sort of name shall we give to verbs like 'believe' and 'wish' and so forth? I should be inclined to call them 'propositional verbs'. This is merely a suggested name for convenience, because they are verbs which have the *form* of relating an object to a proposition. As I have been explaining, that is not what they really do, but it is convenient to call them propositional verbs. Of course you might call them 'attitudes', but I should not like that because it is a psychological term, and although all the instances in our experience are psychological, there is no reason to suppose that all the verbs I am talking of are psychological. There is never any reason to suppose that sort of thing. One should always remember Spinoza's infinite attributes of Deity. It is quite likely that there are in the world the analogues of his infinite attributes. We have no acquaintance with them, but there is no reason to suppose that the mental and the physical exhaust the whole universe, so one can never say that all the instances of any logical sort of thing are of such and such a nature which is not a logical nature: you do not know enough about the world for that. Therefore I should not suggest that all the verbs that have the form exemplified by believing and willing are psychological. I can only say all I know are.

I notice that in my syllabus I said I was going to deal with truth and falsehood to-day, but there is not much to say about them specifically as they are coming in all the time. The thing one first thinks of as true or false is a proposition, and a proposition is nothing. But a belief is true or false in the same way as a proposition is, so that you do have facts in the world that are true or false. I said a while back that there was no distinction of true and false among facts, but as regards that special class of facts that we call 'beliefs', there is, in that sense that a belief which occurs may be

true or false, though it is equally a fact in either case. One *might* call wishes false in the same sense when one wishes something that does not happen. The truth or falsehood depends upon the proposition that enters in. I am inclined to think that perception, as opposed to belief, does go straight to the fact and not through the proposition. When you perceive the fact you do not, of course, have error coming in, because the moment it is a fact that is your object error is excluded. I think that verification in the last resort would always reduce itself to the perception of facts. Therefore the logical form of perception will be different from the logical form of believing, just because of that circumstance that it is a *fact* that comes in. That raises also a number of logical difficulties which I do not propose to go into, but I think you can see for yourself that perceiving would also involve two verbs just as believing does. I am inclined to think that volition differs from desire logically, in a way strictly analogous to that in which perception differs from belief. But it would take us too far from logic to discuss this view.

# Part V

# General Propositions and Existence

## V. GENERAL PROPOSITIONS AND EXISTENCE

I am going to speak to-day about general propositions and existence. The two subjects really belong together; they are the same topic, although it might not have seemed so at the first glance. The propositions and facts that I have been talking about hitherto have all been such as involved only perfectly definite particulars, or relations, or qualities, or things of that sort, never involved the sort of indefinite things one alludes to by such words as 'all', 'some', 'a', 'any', and it is propositions and facts of that sort that I am coming on to to-day.

Really all the propositions of the sort that I mean to talk of to-day collect themselves into two groups—the *first* that are about 'all', and the *second* that are about 'some'. These two sorts belong together; they are each other's negations. If you say, for instance, 'All men are mortal', that is the negative of 'Some men are not mortal'. In regard to general propositions, the distinction of affirmative and negative is arbitrary. Whether you are going to regard the propositions about 'all' as the affirmative ones and the propositions about 'some' as the negative ones, or vice versa, is purely a matter of taste. For example, if I say 'I met no one as I came along', that, on the face of it, you would think is a negative proposition. Of course, that is really a proposition about 'all', i.e., 'All men are among those whom I did not meet'. If, on the other hand, I say 'I met a man as I came along', that would strike you as affirmative, whereas it is the negative of 'All men are among those I did not meet as I came along'. If you consider such propositions as 'All men are mortal' and 'Some men are not mortal', you might say it was more natural to take the general propositions as the affirmative and the existence-propositions as the negative, but, simply because it is quite arbitrary which one is to choose, it is better to forget these words and to speak only of general propositions and propositions asserting existence. All general propositions deny the existence of something or other. If you say 'All men are mortal', that denies the existence of an immortal man, and so on.

I want to say emphatically that general propositions are to be interpreted as not involving existence. When I say, for instance, 'All Greeks are men', I do not want you to suppose that that implies that there are Greeks. It is to be considered emphatically as

not implying that. That would have to be added as a separate proposition. If you want to interpret it in that sense, you will have to add the further statement 'and there are Greeks'. That is for purposes of practical convenience. If you include the fact that there are Greeks, you are rolling two propositions into one, and it causes unnecessary confusion in your logic, because the sorts of propositions that you want are those that do assert the existence of something and general propositions which do not assert existence. If it happened that there were no Greeks, both the proposition that 'All Greeks are men' and the proposition that 'No Greeks are men' would be true. The proposition 'No Greeks are men' is, of course, the proposition 'All Greeks are not-men'. Both propositions will be true simultaneously if it happens that there are no Greeks. All statements about all the members of a class that has no members are true, because the contradictory of any general statement does assert existence and is therefore false in this case. This notion, of course, of general propositions not involving existence is one which is not in the traditional doctrine of the syllogism. In the traditional doctrine of the syllogism, it was assumed that when you have such a statement as 'All Greeks are men', that implies that there are Greeks, and this produced fallacies. For instance, 'All chimeras are animals, and all chimeras breathe flame, therefore some animals breathe flame.' This is a syllogism in Darapti, but that mood of the syllogism is fallacious, as this instance shows. That was a point, by the way, which had a certain historical interest, because it impeded Leibniz in his attempts to construct a mathematical logic. He was always engaged in trying to construct such a mathematical logic as we have now, or rather such a one as Boole constructed, and he was always failing because of his respect for Aristotle. Whenever he invented a really good system, as he did several times, it always brought out that such moods as Darapti are fallacious. If you say 'All $A$ is $B$ and all $A$ is $C$, therefore some $B$ is $C$'—if you say this you incur a fallacy, but he could not bring himself to believe that it was fallacious, so he began again. That shows you that you should not have too much respect for distinguished men.*

Now when you come to ask what really is asserted in a general proposition, such as 'All Greeks are men' for instance, you find that what is asserted is the truth of all values of what I call a propositional function. A *propositional function* is simply *any expression containing an undetermined constituent, or several undetermined*

* Cf. Couturat, *La logique de Leibniz*.

*constituents, and becoming a proposition as soon as the undetermined constituents are determined.* If I say '$x$ is a man' or '$n$ is a number', that is a propositional function; so is any formula of algebra, say $(x+y)(x-y)=x^2-y^2$. A propositional function is nothing, but, like most of the things one wants to talk about in logic, it does not lose its importance through that fact. The only thing really that you can do with a propositional function is to assert either that it is always true, or that it is sometimes true, or that it is never true. If you take:

'If $x$ is a man, $x$ is mortal',

that is always true (just as much when $x$ is not a man as when $x$ is a man); if you take:

'$x$ is a man',

that is sometimes true; if you take:

'$x$ is a unicorn',

that is never true.

One may call a propositional function

*necessary*, when it is always true;
*possible*, when it is sometimes true;
*impossible*, when it is never true.

Much false philosophy has arisen out of confusing propositional functions and propositions. There is a great deal in ordinary traditional philosophy which consists simply in attributing to propositions the predicates which only apply to propositional functions, and, still worse, sometimes in attributing to individuals predicates which merely apply to propositional functions. This case of *necessary, possible, impossible,* is a case in point. In all traditional philosophy there comes a heading of 'modality', which discusses *necessary, possible,* and *impossible* as properties of propositions, whereas in fact they are properties of propositional functions. Propositions are only true or false.

If you take '$x$ is $x$', that is a propositional function which is true whatever '$x$' may be, i.e., a necessary propositional function. If you take '$x$ is a man', that is a possible one. If you take '$x$ is a unicorn', that is an impossible one.

Propositions can only be true or false, but propositional functions have these three possibilities. It is important, I think, to

realize that the whole doctrine of modality only applies to propositional functions, not to propositions.

Propositional functions are involved in ordinary language in a great many cases where one does not usually realize them. In such a statement as 'I met a man', you can understand my statement perfectly well without knowing whom I met, and the actual person is not a constituent of the proposition. You are really asserting there that a certain propositional function is sometimes true, namely the propositional function 'I met $x$ and $x$ is human'. There is at least one value of $x$ for which that is true, and that therefore is a possible propositional function. Whenever you get such words as 'a', 'some', 'all', 'every', it is always a mark of the presence of a propositional function, so that these things are not, so to speak, remote or recondite: they are obvious and familiar.

A propositional function comes in again in such a statement as 'Socrates is mortal', because 'to be mortal' means 'to die at some time or other'. You mean there is a time at which Socrates dies, and that again involves a propositional function, namely, that '$t$ is a time, and Socrates dies at $t$' is possible. If you say 'Socrates is immortal', that also will involve a propositional function. That means that 'If $t$ is any time whatever, Socrates is alive at time $t$', if we take immortality as involving existence throughout the whole of the past as well as throughout the whole of the future. But if we take immortality as only involving existence throughout the whole of the future, the interpretation of 'Socrates is immortal' becomes more complete, viz., 'There is a time $t$, such that if $t'$ is any time later than $t$, Socrates is alive at $t'$.' Thus when you come to write out properly what one means by a great many ordinary statements, it turns out a little complicated. 'Socrates is mortal' and 'Socrates is immortal' are not each other's contradictories, because they both imply that Socrates exists in time, otherwise he would not be either mortal or immortal. One says, 'There is a time at which he dies', and the other says, 'Whatever time you take. he is alive at that time', whereas the contradictory of 'Socrates is mortal' would be true if there is not a time at which he lives.

An undetermined constituent in a propositional function is called a *variable*.

*Existence*. When you take any propositional function and assert of it that it is possible, that it is sometimes true, that gives you the fundamental meaning of 'existence'. You may express it by saying that there is at least one value of $x$ for which that propositional

function is true. Take '$x$ is a man', there is at least one value of $x$ for which this is true. That is what one means by saying that 'There are men', or that 'Men exist'. Existence is essentially a property of a propositional function. It means that that propositional function is true in at least one instance. If you say 'There are unicorns', that will mean that 'There is an $x$, such that $x$ is a unicorn'. That is written in phrasing which is unduly approximated to ordinary language, but the proper way to put it would be '($x$ is a unicorn) is possible'. We have got to have some idea that we do not define, and one takes the idea of 'always true', or of 'sometimes true', as one's undefined idea in this matter, and then you can define the other one as the negative of that. In some ways it is better to take them both as undefined, for reasons which I shall not go into at present. It will be out of this notion of *sometimes*, which is the same as the notion of *possible*, that we get the notion of existence. To say that unicorns exist is simply to say that '($x$ is a unicorn) is possible'.

It is perfectly clear that when you say 'Unicorns exist', you are not saying anything that would apply to any unicorns there might happen to be, because as a matter of fact there are not any, and therefore if what you say had any application to the actual individuals, it could not possibly be significant unless it were true. You can consider the proposition 'Unicorns exist' and can see that it is false. It is not nonsense. Of course, if the proposition went through the general conception of the unicorn to the individual, it could not be even significant unless there were unicorns Therefore when you say 'Unicorns exist', you are not saying anything about any individual things, and the same applies when you say 'Men exist'. If you say that 'Men exist, and Socrates is a man, therefore Socrates exists', that is exactly the same sort of fallacy as it would be if you said 'Men are numerous, Socrates is a man, therefore Socrates is numerous', because existence is a predicate of a propositional function, or derivatively of a class. When you say of a propositional function that it is numerous, you will mean that there are several values of $x$ that will satisfy it, that there are more than one; or, if you like to take 'numerous' in a larger sense, more than ten, more than twenty, or whatever number you think fitting. If $x$, $y$, and $z$ all satisfy a propositional function, you may say that that proposition is numerous, but $x$, $y$, and $z$ severally are not numerous. Exactly the same applies to existence, that is to say that the actual things that there are in the world do not exist,

or, at least, that is putting it too strongly, because that is utter nonsense. To say that they do not exist is strictly nonsense, but to say that they do exist is also strictly nonsense.

It is of propositional functions that you can assert or deny existence. You must not run away with the idea that this entails consequences that it does not entail. If I say 'The things that there are in the world exist', that is a perfectly correct statement, because I am there saying something about a certain class of things; I say it in the same sense in which I say 'Men exist'. But I must not go on to 'This is a thing in the world, and therefore this exists'. It is there the fallacy comes in, and it is simply, as you see, a fallacy of transferring to the individual that satisfies a propositional function a predicate which only applies to a propositional function.

You can see this in various ways. For instance, you sometimes know the truth of an existence-proposition without knowing any instance of it. You know that there are people in Timbuctoo, but I doubt if any of you could give me an instance of one. Therefore you clearly can know existence-propositions without knowing any individual that makes them true. Existence-propositions do not say anything about the actual individual but only about the class or function.

It is exceedingly difficult to make this point clear as long as one adheres to ordinary language, because ordinary language is rooted in a certain feeling about logic, a certain feeling that our primeval ancestors had, and as long as you keep to ordinary language you find it very difficult to get away from the bias which is imposed upon you by language. When I say, e.g., 'There is a $x$ such that $x$ is a man', that is not the sort of phrase one would like to use. 'There is an $x$' is meaningless. What is 'an $x$' anyhow? There is not such a thing. The only way you can really state it correctly is by inventing a new language *ad hoc*, and making the statement apply straight off to '$x$ is a man', as when one says '($x$ is a man) is possible', or invent a special symbol for the statement that '$x$ is a man' is sometimes true.

I have dwelt on this point because it really is of very fundamental importance. I shall come back to existence in my next lecture: existence as it applies to descriptions, which is a slightly more complicated case than I am discussing here. I think an almost unbelievable amount of false philosophy has arisen through not realizing what 'existence' means.

As I was saying a moment ago, a propositional function in itself

is nothing: it is merely a schema. Therefore in the inventory of the world, which is what I am trying to get at, one comes to the question: What is there really in the world that corresponds with these things? Of course, it is clear that we have general *propositions*, in the same sense in which we have atomic propositions. For the moment I will include existence-propositions with general propositions. We have such propositions as 'All men are mortal' and 'Some men are Greeks'. But you have not only such *propositions*; you have also such *facts*, and that, of course, is where you get back to the inventory of the world: that, in addition to particular facts, which I have been talking about in previous lectures, there are also general facts and existence-facts, that is to say, there are not merely *propositions* of that sort but also *facts* of that sort. That is rather an important point to realize. You cannot ever arrive at a general fact by inference from particular facts, however numerous. The old plan of complete induction, which used to occur in books, which was always supposed to be quite safe and easy as opposed to ordinary induction, that plan of complete induction, unless it is accompanied by at least one general proposition, will not yield you the result that you want. Suppose, for example, that you wish to prove in that way that 'All men are mortal', you are supposed to proceed by complete induction, and say '*A* is a man that is mortal', '*B* is a man that is mortal', '*C* is a man that is mortal', and so on until you finish. You will not be able, in that way, to arrive at the proposition 'All men are mortal' unless you know when you have finished. That is to say that, in order to arrive by this road at the general proposition 'All men are mortal', you must already have the general proposition 'All men are among those I have enumerated'. You never can arrive at a general proposition by inference from particular propositions alone. You will always have to have at least one general proposition in your premises. That illustrates, I think, various points. One, which is epistemological, is that if there is, as there seems to be, knowledge of general propositions, then there must be *primitive* knowledge of general propositions (I mean by that, knowledge of general propositions which is not obtained by inference), because if you can never infer a general proposition except from premises of which one at least is general, it is clear that you can never have knowledge of such propositions by inference unless there is knowledge of some general propositions which is not by inference. I think that the sort of way such knowledge—or rather the belief that we have such

knowledge—comes into ordinary life is probably very odd. I mean to say that we do habitually assume general propositions which are exceedingly doubtful; as, for instance, one might, if one were counting up the people in this room, assume that one could see all of them, which is a general proposition, and very doubtful as there may be people under the tables. But, apart from that sort of thing, you do have in any empirical verification of general propositions some kind of assumption that amounts to this, that what you do not see is not there. Of course, you would not put it so strongly as that, but you would assume that, with certain limitations and certain qualifications, if a thing does not appear to your senses, it is not there. That is a general proposition, and it is only through such propositions that you arrive at the ordinary empirical results that one obtains in ordinary ways. If you take a census of the country, for instance, you assume that the people you do not see are not there, provided you search properly and carefully, otherwise your census might be wrong. It is some assumption of that sort which would underlie what seems purely empirical. You could not prove empirically that what you do not perceive is not there, because an empirical proof would consist in perceiving, and by hypothesis you do not perceive it, so that any proposition of that sort, if it is accepted, has to be accepted on its own evidence. I only take that as an illustration. There are many other illustrations one could take of the sort of propositions that are commonly assumed, many of them with very little justification.

I come now to a question which concerns logic more nearly, namely, the reasons for supposing that there are general facts as well as general propositions. When we were discussing molecular propositions I threw doubt upon the supposition that there are molecular facts, but I do not think one can doubt that there are general facts. It is perfectly clear, I think, that when you have enumerated all the atomic facts in the world, it is a further fact about the world that those are all the atomic facts there are about the world, and that is just as much an objective fact about the world as any of them are. It is clear, I think, that you must admit general facts as distinct from and over and above particular facts. The same thing applies to 'All men are mortal'. When you have taken all the particular men that there are, and found each one of them severally to be mortal, it is definitely a new fact that all men are mortal; how new a fact, appears from what I said a moment

ago, that it could not be inferred from the mortality of the several men that there are in the world. Of course, it is not so difficult to admit what I might call existence-facts—such facts as 'There are men', 'There are sheep', and so on. Those, I think, you will readily admit as separate and distinct facts over and above the atomic facts I spoke of before. Those facts have got to come into the inventory of the world, and in that way propositional functions come in as involved in the study of general facts. I do not profess to know what the right analysis of general facts is. It is an exceedingly difficult question, and one which I should very much like to see studied. I am sure that, although the convenient technical treatment is by means of propositional functions, that is not the whole of the right analysis. Beyond that I cannot go.

There is one point about whether there are molecular facts. I think I mentioned, when I was saying that I did not think there were disjunctive facts, that a certain difficulty does arise in regard to general facts. Take 'All men are mortal'. That means:

' "$x$ is a man" implies
"$x$ is a mortal" whatever
$x$ may be.'

You can see at once that it is a hypothetical proposition. It does not imply that there are any men, nor who are men, and who are not; it simply says that if you have anything which is a man, that thing is mortal. As Mr. Bradley has pointed out in the second chapter of his *Principles of Logic*, 'Trespassers will be prosecuted' may be true even if no one trespasses, since it means merely that, *if* any one trespasses, he will be prosecuted. It comes down to this that

' "$x$ is a man" implies "$x$ is a mortal" is always true',

is a fact. It is perhaps a little difficult to see how that can be true if one is going to say that ' "Socrates is a man" implies "Socrates is a mortal" ' is not itself a fact, which is what I suggested when I was discussing disjunctive facts. I do not feel sure that you could not get round that difficulty. I only suggest it as a point which should be considered when one is denying that there are molecular facts, since, if it cannot be got round, we shall have to admit molecular facts.

Now I want to come to the subject of *completely general* propositions and propositional functions. By those I mean propositions and propositional functions that contain only variables and nothing else at all. This covers the whole of logic. Every logical proposition consists wholly and solely of variables, though it is not true that every proposition consisting wholly and solely of variables is logical. You can consider stages of generalizations as, e.g.,

'Socrates loves Plato'
'$x$ loves Plato'
'$x$ loves $y$'
'$x R y$.'

There you have been going through a process of successive generalization. When you have got to $xRy$, you have got a schema consisting only of variables, containing no constants at all, the pure schema of dual relations, and it is clear that any proposition which expresses a dual relation can be derived from $xRy$ by assigning values to $x$ and $R$ and $y$. So that that is, as you might say, the pure form of all those propositions. I mean by the form of a proposition that which you get when for every single one of its constituents you substitute a variable. If you want a different definition of the form of a proposition, you might be inclined to define it as the class of all those propositions that you can obtain from a given one by substituting other constituents for one or more of the constituents the proposition contains. E.g., in 'Socrates loves Plato', you can substitute somebody else for Socrates, somebody else for Plato, and some other verb for 'loves'. In that way there are a certain number of propositions which you can derive from the proposition 'Socrates loves Plato', by replacing the constituents of that proposition by other constituents, so that you have there a certain class of propositions, and those propositions all have a certain form, and one can, if one likes, say that the form they all have is the class consisting of all of them. That is rather a provisional definition, because as a matter of fact, the idea of form is more fundamental than the idea of class. I should not suggest that as a really good definition, but it will do provisionally to explain the sort of thing one means by the form of a proposition. The form of a proposition is that which is in common between any two propositions of which the one can be obtained from the other by substituting other constituents for the original ones. When you

have got down to those formulas that contain only variables, like $xRy$, you are on the way to the sort of thing that you can assert in logic.

To give an illustration, you know what I mean by the domain of a relation: I mean all the terms that have that relation to something. Suppose I say: '$xRy$ implies that $x$ belongs to the domain of $R$', that would be a proposition of logic and is one that contains only variables. You might think it contains such words as 'belong' and 'domain', but that is an error. It is only the habit of using ordinary language that makes those words appear. They are not really there. That is a proposition of pure logic. It does not mention any particular thing at all. This is to be understood as being asserted whatever $x$ and $R$ and $y$ may be. All the statements of logic are of that sort.

It is not a very easy thing to see what are the constituents of a logical proposition. When one takes 'Socrates loves Plato', 'Socrates' is a constituent, 'loves' is a constituent, and 'Plato' is a constituent. Then you turn 'Socrates' into $x$, 'loves' into $R$, and 'Plato' into $y$. $x$ and $R$ and $y$ are nothing, and they are not constituents, so it seems as though all the propositions of logic were entirely devoid of constituents. I do not think that can quite be true. But then the only other thing you can seem to say is that the *form* is a constituent, that propositions of a certain form are always true: that *may* be the right analysis, though I very much doubt whether it is.

There is, however, just this to observe, viz., that the form of a proposition is never a constituent of that proposition itself. If you assert that 'Socrates loves Plato', the form of that proposition is the form of the dual relation, but this is not a constituent of the proposition. If it were you would have to have that constituent related to the other constituents. You will make the form much too substantial if you think of it as really one of the things that have that form, so that the form of a proposition is certainly not a constituent of the proposition itself. Nevertheless it may possibly be a constituent of general statements about propositions that have that form, so I think it is *possible that* logical propositions might be interpreted as being about forms.

I can only say, in conclusion, as regards the constituents of logical propositions, that it is a problem which is rather new. There has not been much opportunity to consider it. I do not think any literature exists at all which deals with it in any way whatever, and it is an interesting problem.

I just want now to give you a few illustrations of propositions which can be expressed in the language of pure variables but are not propositions of logic. Among the propositions that are propositions of logic are included all the propositions of pure mathematics, all of which cannot only be expressed in logical terms but can also be deduced from the premises of logic, and therefore they are logical propositions. Apart from them there are many that can be expressed in logical terms, but cannot be proved from logic, and are certainly not propositions that form part of logic. Suppose you take such a proposition as: 'There is at least one thing in the world'. That is a proposition that you can express in logical terms. It will mean, if you like, that the propositional function '$x=x$' is a possible one. That is a proposition, therefore, that you can express in logical terms; but you cannot know from logic whether it is true or false. So far as you do know it, you know it empirically, because there might happen not to be a universe, and then it would not be true. It is merely an accident, so to speak, that there is a universe. The proposition that there are exactly 30,000 things in the world can also be expressed in purely logical terms, and is certainly not a proposition of logic but an empirical proposition (true or false), because a world containing more than 30,000 things and a world containing fewer than 30,000 things are both possible, so that if it happens that there are exactly 30,000 things, that is what one might call an accident and is not a proposition of logic. There are again two propositions that one is used to in mathematical logic, namely, the multiplicative axiom and the axiom of infinity. These also can be expressed in logical terms, but cannot be proved or disproved by logic. In regard to the axiom of infinity, the impossibility of logical proof or disproof may be taken as certain, but in the case of the multiplicative axiom, it is perhaps still open to some degree to doubt. Everything that is a proposition of logic has got to be in some sense or other like a tautology. It has got to be something that has some peculiar quality, which I do not know how to define, that belongs to logical propositions and not to others. Examples of typical logical propositions are:

'If *p* implies *q* and *q* implies *r*, then *p* implies *r*.'
'If all *a*'s are *b*'s and all *b*'s are *c*'s, then all *a*'s are c's.'
'If all *a*'s are *b*'s, and *x* is an *a*, then *x* is a *b*.'

Those are propositions of logic. They have a certain peculiar quality which marks them out from other propositions and enables us to know them *a priori*. But what exactly that characteristic is, I am not able to tell you. Although it is a necessary characteristic of logical propositions that they should consist solely of variables, i.e., that they should assert the universal truth, or the sometimes-truth, of a propositional function consisting wholly of variables—although that is a necessary characteristic, it is not a sufficient one. I am sorry that I have had to leave so many problems unsolved. I always have to make this apology, but the world really is rather puzzling and I cannot help it.

*Discussion*

*Question*: Is there any word you would substitute for 'existence' which would give existence to individuals? Are you applying the word 'existence' to two ideas, or do you deny that there are two ideas?

*Mr. Russell*: No, there is not an idea that will apply to individuals. As regards the actual things there are in the world, there is nothing at all you can say about them that in any way corresponds to this notion of existence. It is a sheer mistake to say that there is anything analogous to existence that you can say about them. You get into confusion through language, because it is a perfectly correct thing to say 'All the things in the world exist', and it is so easy to pass from this to 'This exists because it is a thing in the world'. There is no sort of point in a predicate which could not conceivably be false. I mean, it is perfectly clear that, if there were such a thing as this existence of individuals that we talk of, it would be absolutely impossible for it not to apply, and that is the characteristic of a mistake.

# Part VI

# Descriptions and Incomplete Symbols

## VI. DESCRIPTIONS AND INCOMPLETE SYMBOLS

I am proposing to deal this time with the subject of descriptions, and what I call 'incomplete symbols', and the existence of described individuals. You will remember that last time I dealt with the existence of ***kinds*** of things, what you mean by saying 'There are men' or 'There are Greeks' or phrases of that sort, where you have an existence which may be plural. I am going to deal to-day with an existence which is asserted to be singular, such as 'The man with the iron mask existed' or some phrase of that sort, where you have some object described by the phrase 'The so-and-so' in the singular, and I want to discuss the analysis of propositions in which phrases of that kind occur.

There are, of course, a great many propositions very familiar in metaphysics which are of that sort: 'I exist' or 'God exists' or 'Homer existed', and other such statements are always occurring in metaphysical discussions, and are, I think, treated in ordinary metaphysics in a way which embodies a simple logical mistake that we shall be concerned with to-day, the same sort of mistake that I spoke of last week in connexion with the existence of kinds of things. One way of examining a proposition of that sort is to ask yourself what would happen if it were false. If you take such a proposition as 'Romulus existed', probably most of us think that Romulus did not exist. It is obviously a perfectly significant statement, whether true or false, to say that Romulus existed. If Romulus himself entered into our statement, it would be plain that the statement that he did not exist would be nonsense, because you cannot have a constituent of a proposition which is nothing at all. Every constituent has got to be there as one of the things in the world, and therefore if Romulus himself entered into the propositions that he existed or that he did not exist, both these propositions could not only not be true, but could not be even significant, unless he existed. That is obviously not the case, and the first conclusion one draws is that, although it *looks* as if Romulus were a constituent of that proposition, that is really a mistake. Romulus does not occur in the proposition 'Romulus did not exist'.

Suppose you try to make out what you do mean by that proposition. You can take, say, all the things that Livy has to say about Romulus, all the properties he ascribes to him, including the only one probably that most of us remember, namely, the fact that he was called 'Romulus'. You can put all this together, and make a

propositional function saying '$x$ has such-and-such properties', the properties being those you find enumerated in Livy. There you have a propositional function, and when you say that Romulus did not exist you are simply saying that that propositional function is never true, that it is impossible in the sense I was explaining last time, i.e., that there is no value of $x$ that makes it true. That reduces the non-existence of Romulus to the sort of non-existence I spoke of last time, where we had the non-existence of unicorns. But it is not a *complete* account of this kind of existence or non-existence, because there is one other way in which a described individual can fail to exist, and that is where the description applies to more than one person. You cannot, e.g., speak of '*The* inhabitant of London', not because there are none, but because there are so many.

You see, therefore, that this proposition 'Romulus existed' or 'Romulus did not exist' does introduce a propositional function, because the name 'Romulus' is not really a name but a sort of truncated description. It stands for a person who did such-and-such things, who killed Remus, and founded Rome, and so on. It is short for that description; if you like, it is short for 'the person who was called "Romulus".' If it were really a name, the question of existence could not arise, because a name has got to name something or it is not a name, and if there is no such person as Romulus there cannot be a name for that person who is not there, so that this single word 'Romulus' is really a sort of truncated or telescoped description, and if you think of it as a name you will get into logical errors. When you realize that it is a description, you realize therefore that any proposition about Romulus really introduces the propositional function embodying the description, as (say) '$x$ was called "Romulus".' That introduces you at once to a propositional function, and when you say 'Romulus did not exist', you mean that this propositional function is not true for one value of $x$.

There are two sorts of descriptions, what one may call 'ambiguous descriptions', when we speak of '*a* so-and-so', and what one may call 'definite descriptions', when we speak of '*the* so-and-so' (in the singular). Instances are:

*Ambiguous*: A man, a dog, a pig, a Cabinet Minister.
*Definite*: The man with the iron mask.
The last person who came into this room.
The only Englishman who ever occupied the Papal See.
The number of the inhabitants of London.
The sum of 43 and 34.

(It is not necessary for a description that it should describe an individual: it may describe a predicate or a relation or anything else.)

It is phrases of that sort, definite descriptions, that I want to talk about to-day. I do not want to talk about ambiguous descriptions, as what there was to say about them was said last time.

I want you to realize that the question whether a phrase is a definite description turns only upon its form, not upon the question whether there is a definite individual so described. For instance, I should call 'The inhabitant of London' a definite description, although it does not in fact describe any definite individual.

The first thing to realize about a definite description is that it is not a name. We will take 'The author of *Waverley*'. That is a definite description, and it is easy to see that it is not a name. A name is a simple symbol (i.e., a symbol which does not have any parts that are symbols), a simple symbol used to designate a certain particular or by extension an object which is not a particular but is treated for the moment as if it were, or is falsely believed to be a particular, such as a person. This sort of phrase, 'The author of *Waverley*', is not a name because it is a complex symbol. It contains parts which *are* symbols. It contains four words, and the meanings of those four words are already fixed and they have fixed the meaning of 'The author of *Waverley*' in the only sense in which that phrase does have any meaning. In that sense, its meaning is already determinate, i.e., there is nothing arbitrary or conventional about the meaning of that whole phrase, when the meanings of 'the', 'author', 'of', and '*Waverley*' have already been fixed. In that respect, it differs from 'Scott', because when you have fixed the meaning of all the other words in the language, you have done nothing toward fixing the meaning of the name 'Scott'. That is to say, if you understand the English language, you would understand the meaning of the phrase 'The author of *Waverley*' if you had never heard it before, whereas you would not understand the meaning of 'Scott' if you had never heard the word before because to know the meaning of a name is to know who it is applied to.

You sometimes find people speaking as if descriptive phrases were names, and you will find it suggested, e.g., that such a proposition as 'Scott is the author of *Waverley*' really asserts that 'Scott' and the 'the author of *Waverley*' are two names for the same person. That is an entire delusion; first of all, because 'the author of *Waverley*' is not a name, and, secondly, because, as you

can perfectly well see, if that were what is meant, the proposition would be one like 'Scott is Sir Walter', and would not depend upon any fact except that the person in question was so called, because a name is what a man is called. As a matter of fact, Scott



was the author of *Waverley* at a time when no one called him so, when no one knew whether he was or not, and the fact that he was the author was a physical fact, the fact that he sat down and wrote it with his own hand, which does not have anything to do with what he was called. It is in no way arbitrary. You cannot settle by any choice of nomenclature whether he is or is not to be the author of *Waverley*, because in actual fact he chose to write it and you cannot help yourself. That illustrates how 'the author of *Waverley*' is quite a different thing from a name. You can prove this point very clearly by formal arguments. In 'Scott is the author of *Waverley*' the 'is', of course, expresses identity, i.e., the entity whose name is Scott is identical with the author of *Waverley*. But, when I say 'Scott is mortal' this 'is', is the 'is' of predication, which is quite different from the 'is' of identity. It is a mistake to interpret 'Scott is mortal' as meaning 'Scott is identical with one among mortals', because (among other reasons) you will not be able to say what 'mortals' are except by means of the propositional function '$x$ is mortal', which brings back the 'is' of predication. You cannot reduce the 'is' of predication to the other 'is'. But the 'is' in 'Scott is the author of *Waverley*' is the 'is' of identity and not of predication.*

If you were to try to substitute for 'the author of *Waverley*' in that proposition any name whatever, say '$c$', so that the proposition becomes 'Scott is $c$', then if '$c$' is a name for anybody who is not Scott, that proposition would become false, while if, on the other hand, '$c$' is a name for Scott, then the proposition will become simply a tautology. It is at once obvious that if '$c$' were 'Scott' itself, 'Scott is Scott' is just a tautology. But if you take any other name which is just a name for Scott, then if the name is being used *as* a name and not as a description, the proposition will still be a tautology. For the name itself is merely a means of pointing to the thing, and does not occur in what you are asserting, so that if one thing has two names, you make exactly the same assertion whichever of the two names you use, provided they are really names and not truncated descriptions.

So there are only two alternatives. If '$c$' is a name, the proposition 'Scott is $c$' is either false or tautologous. But the proposition

* The confusion of these two meanings of 'is' is essential to the Hegelian conception of identity-in-difference.

'Scott is the author of *Waverley*' is neither, and therefore is not the same as any proposition of the form 'Scott is *c*', where '*c*' is a name. That is another way of illustrating the fact that a description is quite a different thing from a name.

I should like to make clear what I was saying just now, that if you substitute another name in place of 'Scott' which is also a name of the same individual, say, 'Scott is Sir Walter', then 'Scott' and 'Sir Walter' are being used as names and not as descriptions, your proposition is strictly a tautology. If one asserts 'Scott is Sir Walter', the way one would mean it would be that one was using the names as descriptions. One would mean that the person called 'Scott' is the person called 'Sir Walter', and 'the person called "Scott" ' is a description, and so is 'the person called "Sir Walter".' So that would not be a tautology. It would mean that the person called 'Scott' is identical with the person called 'Sir Walter'. But if you are using both as names, the matter is quite different. You must observe that the name does not occur in that which you assert when you use the name. The name is merely that which is a means of expressing what it is you are tryng to assert, and when I say 'Scott wrote *Waverley*', the name 'Scott' does not occur in the thing I am asserting. The thing I am asserting is about the person, not about the name. So if I say 'Scott is Sir Walter', using these two names *as* names, neither 'Scott' nor 'Sir Walter' occurs in what I am asserting, but only the person who has these names, and thus what I am asserting is a pure tautology.

It is rather important to realize this about the two different uses of names or of any other symbols: the one when you are talking about the symbol and the other when you are using it *as* a symbol, as a means of talking about something else. Normally, if you talk about your dinner, you are not talking about the word 'dinner' but about what you are going to eat, and that is a different thing altogether. The ordinary use of words is as a means of getting through to things, and when you are using words in that way the statement 'Scott is Sir Walter' is a pure tautology, exactly on the same level as 'Scott is Scott'.

That brings me back to the point that when you take 'Scott is the author of *Waverley*' and you substitute for 'the author of *Waverley*' a name in the place of a description, you get necessarily

either a tautology or a falsehood—a tautology if you substitute 'Scott' or some other name for the same person, and a falsehood if you substitute anything else. But the proposition itself is neither a tautology nor a falsehood, and that shows you that the proposition 'Scott is the author of *Waverley*' is a different proposition from any that can be obtained if you substitute a name in the place of 'the author of *Waverley*'. That conclusion is equally true of any other proposition in which the phrase 'the author of *Waverley*' occurs. If you take any proposition in which that phrase occurs and substitute for that phrase a proper name, whether that name be 'Scott' or any other, you will get a different proposition. Generally speaking, if the name that you substitute is 'Scott', your proposition, if it was true before will remain true, and if it was false before will remain false. But it is a *different* proposition. It is not *always* true that it will remain true or false, as may be seen by the example: 'George IV wished to know if Scott was the author of *Waverley*'. It is not true that George IV wished to know if Scott was Scott. So it is even the case that the truth or the falsehood of a proposition is sometimes changed when you substitute a name of an object for a description of the same object. But in any case it is always a different proposition when you substitute a name for a description.

Identity is a rather puzzling thing at first sight. When you say 'Scott is the author of *Waverley*', you are half-tempted to think there are two people, one of whom is Scott and the other the author of *Waverley*, and they happen to be the same. That is obviously absurd, but that is the sort of way one is always tempted to deal with identity.

When I say 'Scott is the author of *Waverley*' and that 'is' expresses identity, the reason that identity can be asserted there truly and without tautology is just the fact that the one is a name and the other a description. Or they might both be descriptions. If I say 'The author of *Waverley* is the author of *Marmion*', that, of course, asserts identity between two descriptions.

Now the next point that I want to make clear is that when a description (when I say 'description' I mean, for the future, a *definite* description) occurs in a proposition, there is no constituent of that proposition corresponding to that description as a whole. In the true analysis of the proposition, the description is broken

up and disappears. That is to say, when I say 'Scott is the author of *Waverley*' it is a wrong analysis of that to suppose that you have there three constituents, 'Scott', 'is', and 'the author of *Waverley*'. That, of course, is the sort of way you might think of analysing. You might admit that 'the author of *Waverley*' was complex and could be further cut up, but you might think the proposition could be split into those three bits to begin with. That is an entire mistake. 'The author of *Waverley*' is not a constituent of the proposition at all. There is no constituent really there corresponding to the descriptive phrase. I will try to prove that to you now.

The first and most obvious reason is that you can have significant propositions denying the existence of 'the so-and-so'. 'The unicorn does not exist.' 'The greatest finite number does not exist.' Propositions of that sort are perfectly significant, are perfectly sober, true, decent propositions, and that could not possibly be the case if the unicorn were a constituent of the proposition, because plainly it could not be a constituent as long as there were not any unicorns. Because the constituents of propositions, of course, are the same as the constituents of the corresponding facts, and since it is a fact that the unicorn does not exist, it is perfectly clear that the unicorn is not a constituent of that fact, because if there were any fact of which the unicorn was a constituent, there would be a unicorn, and it would not be true that it did not exist. That applies in this case of descriptions particularly. Now since it is possible for 'the so-and-so' not to exist and yet for propositions in which 'the so-and-so' occurs to be significant and even true, we must try to see what is meant by saying that the so-and-so does exist.

The occurrence of tense in verbs is an exceedingly annoying vulgarity due to our preoccupation with practical affairs. It would be much more agreeable if they had no tense, as I believe is the case in Chinese, but I do not know Chinese. You ought to be able to say 'Socrates exists in the past', 'Socrates exists in the present' or 'Socrates exists in the future', or simply 'Socrates exists', without any implication of tense, but language does not allow that, unfortunately. Nevertheless, I am going to use language in this tenseless way: when I say 'The so-and-so exists', I am not going to mean that it exists in the present or in the past or in the future, but simply that it exists, without implying anything involving tense.

'The author of *Waverley* exists': there are two things required for that. First of all, what is 'the author of *Waverley*'? It is the person who wrote *Waverley*, i.e., we are coming now to this, that you have a propositional function involved, viz., '$x$ writes *Waverley*', and the author of *Waverley* is the person who writes *Waverley*, and in order that the person who writes *Waverley* may exist, it is necessary that this propositional function should have two properties:

1. It must be true for *at least* one $x$.
2. It must be true for *at most* one $x$.

If nobody had ever written *Waverley* the author could not exist, and if two people had written it, *the* author could not exist. So that you want these two properties, the one that it is true for at least one $x$, and the other that it is true for at most one $x$, both of which are required for existence.

The property of being true for at least one $x$ is the one we dealt with last time: what I expressed by saying that the propositional function is *possible*. Then we come on to the second condition, that it is true for at most one $x$, and that you can express in this way: 'If $x$ and $y$ wrote *Waverley*, then $x$ is identical with $y$, whatever $x$ and $y$ may be'. That says that at most one wrote it. It does not say that anybody wrote *Waverley* at all, because if nobody had written it, that statement would still be true. It only says that at most one person wrote it.

The first of these conditions for existence fails in the case of the unicorn, and the second in the case of the inhabitant of London.

We can put these two conditions together and get a portmanteau expression including the meaning of both. You can reduce them both down to this, that: '("$x$ wrote *Waverley*" is equivalent to "$x$ is $c$" whatever $x$ may be) is possible in respect of $c$.' That is as simple, I think, as you can make the statement.

You see that means to say that there is some entity $c$, we may not know what it is, which is such that when $x$ is $c$, it is true that $x$ wrote *Waverley*, and when $x$ is not $c$, it is not true that $x$ wrote *Waverley*, which amounts to saying that $c$ is the only person who wrote *Waverley*; and I say there is a value of $c$ which makes that true. So that this whole expression, which is a propositional function about $c$, is *possible* in respect of $c$ (in the sense explained last time).

That is what I mean when I say that the author of *Waverley* exists. When I say 'the author of *Waverley* exists', I mean that there is an entity $c$ such that '$x$ wrote *Waverley*' is true when $x$ is $c$, and is false when $x$ is not $c$. 'The author of *Waverley*' as a constituent has quite disappeared there, so that when I say 'The author of *Waverley* exists' I am not saying anything about the author of *Waverley*. You have instead this elaborate to-do with propositional functions, and 'the author of *Waverley*' has disappeared. That is why it is possible to say significantly 'The author of *Waverley* did not exist'. It would not be possible if 'the author of *Waverley*' were a constituent of propositions in whose verbal expression this descriptive phrase occurs.

The fact that you can discuss the proposition 'God exists' is a proof that 'God', as used in that proposition, is a description and not a name. If 'God' were a name, no question as to existence could arise.

I have now defined what I mean by saying that a thing described exists. I have still to explain what I mean by saying that a thing described has a certain property. Supposing you want to say 'The author of *Waverley* was human', that will be represented thus: '("$x$ wrote *Waverley*" is equivalent to "$x$ is $c$" whatever $x$ may be, and $c$ is human) is possible with respect to $c$'.

You will observe that what we gave before as the meaning of 'The author of *Waverley* exists' is part of this proposition. It is part of any proposition in which 'the author of *Waverley*' has what I call a 'primary occurrence'. When I speak of a 'primary occurrence' I mean that you are not having a proposition about the author of *Waverley* occurring as a part of some larger proposition, such as 'I believe that the author of *Waverley* was human' or 'I believe that the author of *Waverley* exists'. When it is a primary occurrence, i.e., when the proposition concerning it is not just part of a larger proposition, the phrase which we defined as the meaning of 'The author of *Waverley* exists' will be part of that proposition. If I say the author of *Waverley* was human, or a poet, or a Scotsman, or whatever I say about the author of *Waverley* in the way of a primary occurrence, always this statement of his existence is part of the proposition. In that sense all these propositions that I make about the author of *Waverley* imply that the author of *Waverley* exists. So that any statement in which a description has a

primary occurrence implies that the object described exists. If I say 'The present King of France is bald', that implies that the present King of France exists. If I say, 'The present King of France has a fine head of hair', that also implies that the present King of France exists. Therefore unless you understand how a proposition containing a description is to be denied, you will come to the conclusion that it is not true either that the present King of France is bald or that he is not bald, because if you were to enumerate all the things that are bald you would not find him there, and if you were to enumerate all the things that are not bald, you would not find him there either. The only suggestion I have found for dealing with that on conventional lines is to suppose that he wears a wig. You can only avoid the hypothesis that he wears a wig by observing that the denial of the proposition 'The present King of France is bald' will not be 'The present King of France is not bald', if you mean by that 'There is such a person as the King of France and that person is not bald'. The reason of this is that when you state that the present King of France is bald you say 'There is a *c* such that *c* is now King of France and *c* is bald' and the denial is not 'There is a *c* such that *c* is now King of France and *c* is not bald'. It is more complicated. It is: 'Either there is not a *c* such that *c* is now King of France, or, if there is such a *c*, then *c* is not bald.' Therefore you see that, if you want to deny the proposition 'The present King of France is bald', you can do it by denying that he exists, instead of by denying that he is bald. In order to deny this statement that the present King of France is bald, which is a statement consisting of two parts, you can proceed by denying either part. You can deny the one part, which would lead you to suppose that the present King of France exists but is not bald, or the other part, which will lead you to the denial that the present King of France exists; and either of those two denials will lead you to the falsehood of the proposition 'The present King of France is bald'. When you say 'Scott is human' there is no possibility of a double denial. The only way you can deny 'Scott is human' is by saying 'Scott is not human'. But where a descriptive phrase occurs, you do have the double possibility of denial.

It is of the utmost importance to realize that 'the so-and-so' does not occur in the analysis of propositions in whose verbal

expression it occurs, that when I say 'The author of *Waverley* is human', 'the author of *Waverley*' is not the subject of that proposition, in the sort of way that Scott would be if I said 'Scott is human', using 'Scott' as a name. I cannot emphasize sufficiently how important this point is, and how much error you get into metaphysics if you do not realize that when I say 'The author of *Waverley* is human' that is not a proposition of the same form as 'Scott is human'. It does not contain a constituent 'the author of *Waverley*'. The importance of that is very great for many reasons, and one of them is this question of existence. As I pointed out to you last time, there is a vast amount of philosophy that rests upon the notion that existence is, so to speak, a property that you can attribute to things, and that the things that exist have the property of existence and the things that do not exist do not. That is rubbish, whether you take kinds of things, or individual things described. When I say, e.g., 'Homer existed', I am meaning by 'Homer' some description, say 'the author of the Homeric poems', and I am asserting that those poems were written by one man, which is a very doubtful proposition; but if you could get hold of the actual person who did actually write those poems (supposing there was such a person), to say of him that he existed would be uttering nonsense, not a falsehood but nonsense, because it is only of persons described that it can be significantly said that they exist. Last time I pointed out the fallacy in saying 'Men exist, Socrates is a man, therefore Socrates exists'. When I say 'Homer exists, this is Homer, therefore this exists', that is a fallacy of the same sort. It is an entire mistake to argue: 'This is the author of the Homeric poems and the author of the Homeric poems exists, therefore this exists'. It is only where a prepositional function comes in that existence may be significantly asserted. You can assert 'The so-and-so exists', meaning that there is just one *c* which has those properties, but when you get hold of a *c* that has them, you cannot say of this *c* that it exists, because that is nonsense: it is not false, but it has no meaning at all.

So the individuals that there are in the world do not exist, or rather it is nonsense to say that they exist and nonsense to say that they do not exist. It is not a thing you can say when you have named them, but only when you have described them. When you say 'Homer exists', you mean 'Homer' is a description which

applies to something. A description when it is fully stated is always of the form 'the so-and-so'.

The sort of things that are like these descriptions in that they occur in words in a proposition, but are not in actual fact constituents of the proposition rightly analysed, things of that sort I call 'incomplete symbols'. There are a great many sorts of incomplete symbols in logic, and they are sources of a great deal of confusion and false philosophy, because people get misled by grammar. You think that the proposition 'Scott is mortal' and the proposition 'The author of *Waverley* is mortal' are of the same form. You think that they are both simple propositions attributing a predicate to a subject. That is an entire delusion: one of them is (or rather might be) and one of them is not. These things, like 'the author of *Waverley*', which I call incomplete symbols, are things that have absolutely no meaning whatsoever in isolation but merely acquire a meaning in a context. 'Scott' taken as a name has a meaning all by itself. It stands for a certain person, and there it is. But 'the author of *Waverley*' is not a name, and does not all by itself mean anything at all, because when it is rightly used in propositions, those propositions do not contain any constituent corresponding to it.

There are a great many other sorts of incomplete symbols besides descriptions. These are classes, which I shall speak of next time, and relations taken in extension, and so on. Such aggregations of symbols are really the same thing as what I call 'logical fictions', and they embrace practically all the familiar objects of daily life: tables, chairs, Piccadilly, Socrates, and so on. Most of them are either classes, or series, or series of classes. In any case they are all incomplete symbols, i.e., they are aggregations that only have a meaning in use and do not have any meaning in themselves.

It is important, if you want to understand the analysis of the world, or the analysis of facts, or if you want to have any idea what there really is in the world, to realize how much of what there is in phraseology is of the nature of incomplete symbols. You can see that very easily in the case of 'the author of *Waverley*' because 'the author of *Waverley*' does not stand simply for Scott, nor for anything else. If it stood for Scott, 'Scott is the author of *Waverley*' would be the same proposition as 'Scott is Scott', which it is not,

since George IV wished to know the truth of the one and did not wish to know the truth of the other. If 'the author of *Waverley*' stood for anything other than Scott, 'Scott is the author of *Waverley*' would be false, which it is not. Hence you have to conclude that 'the author of *Waverley*' does not, in isolation, really stand for anything at all; and that is the characteristic of incomplete symbols.



# Part VII

## The Theory of Types and Symbolism : Classes



## VII. THE THEORY OF TYPES AND SYMBOLISM: CLASSES

Before I begin to-day the main subject of my lecture, I should like to make a few remarks in explanation and amplification of what I have said about existence in my previous two lectures. This is chiefly on account of a letter I have received from a member of the class, raising many points which, I think, were present in other minds too.

The *first* point I wish to clear up is this: I did not mean to say that when one says a thing exists, one means the same as when one says it is possible. What I meant was, that the fundamental logical idea, the primitive idea, out of which both those are derived is the same. That is not quite the same thing as to say that the statement that a thing exists is the same as the statement that it is possible, which I do not hold. I used the word 'possible' in perhaps a somewhat strange sense, because I wanted some word for a fundamental logical idea for which no word exists in ordinary language, and therefore if one is to try to express in ordinary language the idea in question, one has to take some word and make it convey the sense that I was giving to the word 'possible', which is by no means the only sense that it has but is a sense that was convenient for my purpose. We say of a propositional function that it is possible, where there are cases in which it is true. That is not exactly the same thing as what one ordinarily means, for instance, when one says that it is possible it may rain to-morrow. But what I contend is, that the ordinary uses of the word 'possible' are derived from this notion by a process. E.g., normally when you say of a proposition that it is possible, you mean something like this: first of all it is implied that you do not know whether it is true or false; and I think it is implied, secondly, that it is one of a class of propositions, some of which are known to be true. When I say, e.g., 'It is possible that it may rain to-morrow'—'It will rain to-morrow' is one of the class of propositions 'It rains at time *t*', where *t* is different times. We mean partly that we do not know whether it will rain or whether it will not, but also that we do know that that is the sort of proposition that is quite apt to be true, that it is a value of a propositional function of which we know some value to be true. Many of the ordinary uses of 'possible' come under that head, I think you will find. That is to say, that if you say of a proposition that it is possible, what you have is this: 'There is in this proposition some constituent, which, if you turn it into a variable, will give you a propositional function that is sometimes true.' You ought not therefore to say of a proposition simply that

it is possible, but rather that it is possible in respect of such-and-such a constituent. That would be a more full expression.

When I say, for instance, that 'Lions exist', I do not mean the same as if I said that lions were possible; because when you say 'Lions exist', that means that the propositional function '$x$ is a lion' is a possible one in the sense that there are lions, while when you say 'Lions are possible' that is a different sort of statement altogether, not meaning that a casual individual animal may be a lion, but rather that a *sort* of animal may be the *sort* that we call 'lions'. If you say 'Unicorns are possible', e.g., you would mean that you do not know any reason why there should not be unicorns, which is quite a different proposition from 'Unicorns exist'. As to what you would mean by saying that unicorns are possible, it would always come down to the same thing as 'It is possible it may rain to-morrow'. You would mean, the proposition 'There are unicorns' is one of a certain set of propositions some of which are known to be true, and that the description of the unicorn does not contain in it anything that *shows* there could not be such beasts.

When I say a propositional function is possible, meaning there are cases in which it is true, I am consciously using the word 'possible' in an unusual sense, because I want a single word for my fundamental idea, and cannot find any word in ordinary language that expresses what I mean.

*Secondly*, it is suggested that when one says a thing exists, it means that it is in time, or in time and space, at any rate in time. That is a very common suggestion, but I do not think that really there is much to be said for that use of the words; in the first place, because if that were all you meant, there would be no need for a separate word. In the second place, because after all in the sense, whatever that sense may be, in which the things are said to exist that one ordinarily regards as existing, one may very well wish to discuss the question whether there are things that exist without being in time. Orthodox metaphysics holds that whatever is really real is not in time, that to be in time is to be more or less unreal, and that what really exists is not in time at all. And orthodox theology holds that God is not in time. I see no reason why you should frame your definition of existence in such a way as to preclude that notion of existence. I am inclined to think that there are things that are not in time, and I should be sorry to use the word existence in that sense when you have already the phrase 'being in time' which quite sufficiently expresses what you mean.

Another objection to that definition is, that it does not in the least fit the sort of use of 'existence' which was underlying my discus-

sion, which is the common one in mathematics. When you take existence-theorems, for instance, as when you say 'An even prime exists', you do not mean that the number two is in time but that you can find a number of which you can say 'This is even and prime'. One does ordinarily in mathematics speak of propositions of that sort as existence-theorems, i.e., you establish that there is an object of such-and-such a sort, that object being, of course, in mathematics a logical object, not a particular, not a thing like a lion or a unicorn, but an object like a function or a number, something which plainly does not have the property of being in time at all, and it is that sort of sense of existence-theorems that is relevant in discussing the meaning of existence as I was doing in the last two lectures. I do, of course, hold that that sense of existence can be carried on to cover the more ordinary uses of existence, and does in fact give the key to what is underlying those ordinary uses, as when one says that 'Homer existed' or 'Romulus did not exist', or whatever we may say of that kind.

I come now to a *third* suggestion about existence, which is also a not uncommon one, that of a given particular 'this' you can say 'This exists' in the sense that it is not a phantom or an image or a universal. Now I think that use of existence involves confusions which it is exceedingly important to get out of one's mind, really rather dangerous mistakes. In the first place, we must separate phantoms and images from universals; they are on a different level. Phantoms and images do undoubtedly exist in that sense, whatever it is, in which ordinary objects exist. I mean, if you shut your eyes and imagine some visual scene, the images that are before your mind while you are imagining are undoubtedly there. They are images, something is happening, and what is happening is that the images are before your mind, and these images are just as much part of the world as tables and chairs and anything else. They are perfectly decent objects, and you only call them unreal (if you call them so), or treat them as non-existent, because they do not have the usual sort of relations to other objects. If you shut your eyes and imagine a visual scene and you stretch out your hand to touch what is imaged, you won't get a tactile sensation, or even necessarily a tactile image. You will not get the usual correlation of sight and touch. If you imagine a heavy oak table, you can remove it without any muscular effort, which is not the case with oak tables that you actually see. The general correlations of your images are quite different from the correlations of what one chooses to call 'real' objects. But that is not to say images are unreal. It is

only to say they are not part of physics. Of course, I know that this belief in the physical world has established a sort of reign of terror. You have got to treat with disrespect whatever does not fit into the physical world. But that is really very unfair to the things that do not fit in. They are just as much there as the things that do. The physical world is a sort of governing aristocracy, which has somehow managed to cause everything else to be treated with disrespect. That sort of attitude is unworthy of a philosopher. We should treat with exactly equal respect the things that do not fit in with the physical world, and images are among them.

'Phantoms', I suppose, are intended to differ from 'images' by being of the nature of hallucinations, things that are not merely imagined but that go with belief. They again are perfectly real; the only odd thing about them is their correlations. Macbeth sees a dagger. If he tried to touch it, he would not get any tactile sensation, but that does not imply that he was not *seeing* a dagger, it only implies that he was not *touching* it. It does not in any way imply that the visual sensation was not there. It only means to say that the sort of correlation between sight and touch that we are used to is the normal rule but not a universal one. In order to pretend that it is universal, we say that a thing is unreal when it does not fit in. You say 'Any man who is a man will do such-and-such a thing.' You then find a man who will not, and you say, he is not a man. That is just the same sort of thing as with these daggers that you cannot touch.

I have explained elsewhere the sense in which phantoms are unreal.* When you see a 'real' man, the immediate object that you see is one of a whole system of particulars, all of which belong together and make up collectively the various 'appearances' of the man to himself and others. On the other hand, when you see a phantom of a man, that is an isolated particular, not fitting into a system as does a particular which one calls an appearance of the 'real' man. The phantom is in itself just as much part of the world as the normal sense-datum, but it lacks the usual correlation and therefore gives rise to false inferences and becomes deceptive.

As to universals, when I say of a particular that it exists, I certainly do not mean the same thing as if I were to say that it is not a universal. The statement concerning any particular that it is not a universal is quite strictly nonsense—not false, but strictly and exactly nonsense. You never can place a particular in the sort of place where a universal ought to be, and vice versa. If I say '*a* is

* See *Our Knowledge of the External World*, Chap. III. Also Section XII of 'Sense-Data and Physics' in *Mysticism and Logic*.

not *b*', or if I say '*a* is *b*', that implies that *a* and *b* are of the same logical type. When I say of a universal that it exists, I should be meaning it in a different sense from that in which one says that particulars exist. E.g., you might say 'Colours exist in the spectrum between blue and yellow.' That would be a perfectly respectable statement, the colours being taken as universals. You mean simply that the propositional function '*x* is a colour between blue and yellow' is one which is capable of truth. But the *x* which occurs there is not a particular, it is a universal. So that you arrive at the fact that the ultimate important notion involved in existence is the notion that I developed in the lecture before last, the notion of a propositional function being sometimes true, or being, in other words, possible. The distinction between what some people would call real existence, and existence in people's imagination or in my subjective activity, that distinction, as we have just seen, is entirely one of correlation. I mean that anything which appears to you, you will be mistakenly inclined to say has some more glorified form of existence if it is associated with those other things I was talking of in the way that the appearance of Socrates to you would be associated with his appearance to other people. You would say he was only in your imagination if there were not those other correlated appearances that you would naturally expect. But that does not mean that the appearance to you is not exactly as much a part of the world as if there were other correlated appearances. It will be exactly as much a part of the real world, only it will fail to have the correlations that you expect. That applies to the question of sensation and imagination. Things imagined do not have the same sort of correlations as things sensated. If you care to see more about this question, I wrote a discussion in *The Monist* for January, 1915, and if any of you are interested, you will find the discussion there.

I come now to the proper subject of my lecture, but shall have to deal with it rather hastily. It was to explain the theory of types and the definition of classes. Now first of all, as I suppose most of you are aware, if you proceed carelessly with formal logic, you can very easily get into contradictions. Many of them have been known for a long time, some even since the time of the Greeks, but it is only fairly recently that it has been discovered that they bear upon mathematics, and that the ordinary mathematician is liable to fall into them when he approaches the realms of logic, unless he is very cautious. Unfortunately the mathematical ones are more difficult to expound, and the ones easy to expound strike one as mere puzzles or tricks.

You can start with the question whether or not there is a greatest cardinal number. Every class of things that you can choose to mention has some cardinal number. That follows very easily from the definition of cardinal numbers as classes of similar classes, and you would be inclined to suppose that the class of all things there are in the world would have about as many members as a class could be reasonably expected to have. The plain man would suppose you could not get a larger class than the class of all the things there are in the world. On the other hand, it is very easy to prove that if you take selections of some of the members of a class, making those selections in every conceivable way that you can, the number of different selections that you can make is greater than the original number of terms. That is easy to see with small numbers. Suppose you have a class with just three numbers, *a*,*b*,*c*. The first selection that you can make is the selection of no terms. The next of *a* alone, *b* alone, *c* alone. Then *bc*, *ca*, *ab*, *abc*, which makes in all 8 (i.e., $2^3$) selections. Generally speaking, if you have $n$ terms, you can make $2^n$ selections. It is very easy to prove that $2^n$ is always greater than $n$, whether $n$ happens to be finite or not. So you find that the total number of things in the world is not so great as the number of classes that can be made up out of those things. I am asking you to take all these propositions for granted, because there is not time to go into the proofs, but they are all in Cantor's work. Therefore you will find that the total number of things in the world is by no means the greatest number. On the contrary, there is a heirarchy of numbers greater than that. That, on the face of it, seems to land you in a contradiction. You have, in fact, a perfectly precise arithmetical proof that there are *fewer* things in heaven or earth than are dreamt of in *our* philosophy. That shows how philosophy advances.

You are met with the necessity, therefore, of distinguishing between classes and particulars. You are met with the necessity of saying that a class consisting of two particulars is not itself in turn a fresh particular, and that has to be expanded in all sorts of ways; i.e., you will have to say that in the sense in which there are particulars, in that sense it is not true to say there are classes. The sense in which there are classes is a different one from the sense in which there are particulars, because if the senses of the two were exactly the same, a world in which there are three particulars and therefore eight classes, would be a world in which there are at least eleven things. As the Chinese philosopher pointed out long ago, a dun cow and a bay horse makes three things: separately they are each one, and taken together they are another, and therefore three.

I pass now to the contradiction about classes that are not members of themselves. You would say generally that you would not expect a class to be a member of itself. For instance, if you take the class of all the teaspoons in the world, that is not in itself a teaspoon. Or if you take all the human beings in the world, the whole class of them is not in turn a human being. Normally you would say you cannot expect a whole class of things to be itself a member of that class. But there are apparent exceptions. If you take, e.g., all the things in the world that are not teaspoons and make up a class of them, that class obviously (you would say) will not be a teaspoon. And so generally with negative classes. And not only with negative classes, either, for if you think for a moment that classes are things in the same sense in which things are things, you will then have to say that the class consisting of all the things in the world is itself a thing in the world, and that therefore this class is a member of itself. Certainly you would have thought that it was clear that the class consisting of all the classes in the world is itself a class. That I think most people would feel inclined to suppose, and therefore you would get there a case of a class which is a member of itself. If there is any sense in asking whether a class is a member of itself or not, then certainly in all the cases of the ordinary classes of everyday life you find that a class is not a member of itself. Accordingly, that being so, you could go on to make up the class of all those classes that are not members of themselves, and you can ask yourself, when you have done that, is that class a member of itself or is it not?

Let us first suppose that it is a member of itself. In that case it is one of those classes that are not members of themselves, i.e., it is not a member of itself. Let us then suppose that it is not a member of itself. In that case it is not one of those classes that are not members of themselves, i.e., it is one of those classes that are members of themselves, i.e., it is a member of itself. Hence either hypothesis, that it is or that it is not a member of itself, leads to its contradiction. If it is a member of itself, it is not, and if it is not, it is.

That contradiction is extremely interesting. You can modify its form; some forms of modification are valid and some are not. I once had a form suggested to me which was not valid, namely the question whether the barber shaves himself or not. You can define the barber as 'one who shaves all those, and those only, who do not shave themselves'. The question is, does the barber shave himself? In this form the contradiction is not very difficult

to solve. But in our previous form I think it is clear that you can only get around it by observing that the whole question whether a class is or is not a member of itself is nonsense, i.e., that no class either is or is not a member of itself, and that it is not even true to say that, because the whole form of words is just a noise without meaning. That has to do with the fact that classes, as I shall be coming on to show, are incomplete symbols in the same sense in which the descriptions are that I was talking of last time; you are talking nonsense when you ask yourself whether a class is or is not a member of itself, because in any full statement of what is meant by a proposition which seems to be about a class, you will find that the class is not mentioned at all and that there is nothing about a class in that statement. It is absolutely necessary, if a statement about a class is to be significant and not pure nonsense, that it should be capable of being translated into a form in which it does not mention the class at all. This sort of statement, 'Such-and-such a class is or is not a member of itself', will not be capable of that kind of translation. It is analogous to what I was saying about descriptions: the symbol for a class is an incomplete symbol; it does not really stand for part of the propositions in which symbolically it occurs, but in the right analysis of those propositions that symbol has been broken up and disappeared.

There is one other of these contradictions that I may as well mention, the most ancient, the saying of Epimenides that 'All Cretans are liars'. Epimenides was a man who slept for sixty years without stopping, and I believe that it was at the end of that nap that he made the remark that all Cretans were liars. It can be put more simply in the form: if a man makes the statement 'I am lying', is he lying or not? If he is, that is what he said he was doing, so he is speaking the truth and not lying. If, on the other hand, he is not lying, then plainly he is speaking the truth in saying that he is lying, and therefore he is lying, since he says truly that that is what he is doing. It is an ancient puzzle, and nobody treated that sort of thing as anything but a joke until it was found that it had to do with such important and practical problems as whether there is a greatest cardinal or ordinal number. Then at last these contradictions were treated seriously. The man who says 'I am lying' is really asserting 'There is a proposition which I am asserting and which is false'. That is presumably what you mean by lying. In order to get out the contradiction you have to take that whole assertion of his as one of the propositions to which his assertion applies; i.e., when he says 'There is a proposition which I am asserting and which is false', the word 'proposition' has to be interpreted as to include among propositions his statement to the

effect that he is asserting a false proposition. Therefore you have to suppose that you have a certain totality, viz., that of propositions, but that that totality contains members which can only be defined in terms of itself. Because when you say 'There is a proposition which I am asserting and which is false', that is a statement whose meaning can only be got by reference to the totality of propositions. You are not saying which among all the propositions there are in the world it is that you are asserting and that is false. Therefore it presupposes that the totality of proposition is spread out before you and that some one, though you do not say which, is being asserted falsely. It is quite clear that you get into a vicious circle if you first suppose that this totality of propositions is spread out before you, so that you can without picking any definite one say 'Some one out of this totality is being asserted falsely', and that yet, when you have gone on to say 'Some one out of this totality is being asserted falsely', that assertion is itself one of the totality you were to pick out from. That is exactly the situation you have in the paradox of the liar. You are supposed to be given first of all a set of propositions, and you assert that some one of these is being asserted falsely, then that assertion itself turns out to be one of the set, so that it is obviously fallacious to suppose the set already there in its entirety. If you are going to say anything about 'all propositions', you will have to define propositions, first of all, in some such way as to exclude those that refer to all the propositions of the sort already defined. It follows that the word 'proposition', in the sense in which we ordinarily try to use it, is a meaningless one, and that we have got to divide propositions up into sets and can make statements about all propositions in a given set, but those propositions will not themselves be members of the set. For instance, I may say 'All atomic propositions are either true or false', but that itself will not be an atomic proposition. If you try to say 'All propositions are either true or false', without qualification, you are uttering nonsense, because if it were not nonsense it would have to be itself a proposition and one of those included in its own scope, and therefore the law of excluded middle as enunciated just now is a meaningless noise. You have to cut propositions up into different types, and you can start with atomic propositions or, if you like, you can start with those propositions that do not refer to sets of propositions at all. Then you will take

next those that refer to sets of propositions of that sort that you had first. Those that refer to sets of propositions of the first type, you may call the second type, and so on.

If you apply that to the person who says 'I am lying', you will find that the contradiction has disappeared, because he will have to say what type of liar he is. If he says 'I am asserting a false proposition of the first type', as a matter of fact that statement, since it refers to the totality of propositions of the first type, is of the second type. Hence it is not true that he is asserting a false proposition of the first type, and he remains a liar. Similarly, if he said he was asserting a false proposition of the 30,000th type, that would be a statement of the 30,001st type, so he would still be a liar. And the counter-argument to prove that he was also not a liar has collapsed.

You can lay it down that a totality of any sort cannot be a member of itself. That applies to what we are saying about classes. For instance, the totality of classes in the world cannot be a class in the same sense in which they are. So we shall have to distinguish a hierarchy of classes. We will start with the classes that are composed entirely of particulars: that will be the first type of classes. Then we will go on to classes whose members are classes of the first type: that will be the second type. Then we will go on to classes whose members are classes of the second type: that will be the third type, and so on. Never is it possible for a class of one type either to be or not to be identical with a class of another type. That applies to the question I was discussing a moment ago, as to how many things there are in the world. Supposing there are three particulars in the world. There are then, as I was explaining, 8 classes of particulars. There will be $2^8$ (i.e., 256) classes of classes of particulars, and $2^{256}$ classes of classes of classes of particulars, and so on. You do not get any contradiction arising out of that, and when you ask yourself the question: 'Is there, or is there not a greatest cardinal number?' the answer depends entirely upon whether you are confining yourself within some one type, or whether you are not. Within any given type there is a greatest cardinal number, namely, the number of objects of that type, but you will always be able to get a larger number by going up to the next type. Therefore, there is no number so great but what you can get a greater number in a sufficiently high type. There you

have the two sides of the argument: the one side when the type is given, the other side when the type is not given.

I have been talking, for brevity's sake, as if there really were all these different sorts of things. Of course, that is nonsense. There are particulars, but when one comes on to classes, and classes of classes, and classes of classes of classes, one is talking of logical fictions. When I say there are no such things, that again is not correct. It is not significant to say 'There are such things', in the same sense of the words 'there are' in which you can say 'There are particulars'. If I say 'There are particulars' and 'There are classes', the two phrases 'there are' will have to have different meanings in those two propositions, and if they have suitable different meanings, both propositions may be true. If, on the other hand, the words 'there are' are used in the same sense in both, then one at least of those statements must be nonsense, not false but nonsense. The question then arises, what is the sense in which one can say 'There are classes', or in other words, what do you mean by a statement in which a class appears to come in? First of all, what are the sort of things you would like to say about classes? They are just the same as the sort of things you want to say about propositional functions. You want to say of a propositional function that it is sometimes true. That is the same thing as saying of a class that it has members. You want to say that is it true for exactly 100 values of the variables. That is the same as saying of a class that it has a hundred members. All the things you want to say about classes are the same as the things you want to say about propositional functions excepting for accidental and irrelevant linguistic forms, with, however, a certain proviso which must now be explained.

Take, e.g., two propositional functions such as '$x$ is a man', '$x$ is a featherless biped'. Those two are formally equivalent, i.e., when one is true so is the other, and vice versa. Some of the things that you can say about a propositional function will not necessarily remain true if you substitute another formally equivalent propositional function in its place. For instance, the propositional function '$x$ is a man' is one which has to do with the concept of humanity. That will not be true of '$x$ is a featherless biped'. Or if you say, 'so-and-so asserts that such-and-such is a man' the propositional function '$x$ is a man' comes in there, but '$x$ is a

featherless biped' does not. There are a certain number of things which you can say about a propositional function which would be not true if you substitute another formally equivalent propositional function. On the other hand, any statement about a propositional function which will remain true or remain false, as the case may be, when you substitute for it another formally equivalent propositional function, may be regarded as being about the class which is associated with the propositional function. I want you to take the words *may be regarded* strictly. I am using them instead of *is*, because *is* would be untrue 'Extensional' statements about functions are those that remain true when you substitute any other formally equivalent function, and these are the ones that may be regarded as being about the class. If you have any statement about a function which is not extensional, you can always derive from it a somewhat similar statement which is extensional, viz., there is a function formally equivalent to the one in question about which the statement in question is true. This statement, which is manufactured out of the one you started with, will be extensional. It will always be equally true or equally false of any two formally equivalent functions, and this derived extensional statement may be regarded as being the corresponding statement about the associated class. So, when I say that 'The class of men has so-and-so many members', that is to say 'There are so-and-so many men in the world', that will be derived from the statement that '$x$ is human' is satisfied by so-and-so many values of $x$, and in order to get it into the extensional form, one will put it in this way, that 'There is a function formally equivalent to "$x$ is human", which is true for so-and-so many values of $x$'. That I should define as what I mean by saying 'The class of men has so-and-so many members'. In that way you find that all the formal properties that you desire of classes, all their formal uses in mathematics, can be obtained without supposing for a moment that there are such things as classes, without supposing, that is to say, that a proposition in which symbolically a class occurs, does in fact contain a constituent corresponding to that symbol, and when rightly analysed that symbol will disappear, in the same sort of way as descriptions disappear when the propositions are rightly analysed in which they occur.

There are certain difficulties in the more usual view of classes,

in addition to those we have already mentioned, that are solved by our theory. One of these concerns the null-class, i.e., the class consisting of no members, which is difficult to deal with on a purely extensional basis. Another is concerned with unit-classes. With the ordinary view of classes you would say that a class that has only one member was the same as that one member. That will land you in terrible difficulties, because in that case that one member is a member of that class, namely, itself. Take, e.g., the class of 'Lecture audiences in Gordon Square'.* That is obviously a class of classes, and probably it is a class that has only one member, and that one member itself (so far) has more than one member. Therefore if you were to identify the class of lecture audiences in Gordon Square with the only lecture audience that there is in Gordon Square, you would have to say both that it has one member and that it has twenty members, and you will be landed in contradictions, because this audience has more than one member, but the class of audiences in Gordon Square has only one member. Generally speaking, if you have any collection of many objects forming a class, you can make a class of which that class is the only member, and the class of which that class is the only member will have only one member, though this only member will have many members. This is one reason why you must distinguish a unit-class from its only member. Another is that, if you do not, you will find that the class is a member of itself, which is objectionable, as we saw earlier in this lecture. I have omitted a subtlety connected with the fact that two formally equivalent functions may be of different types. For the way of treating this point, see *Principia Mathematica*, page 20, and Introduction, Chapter III.

I have not said quite all that I ought to have said on this subject. I meant to have gone a little more into the theory of types. The theory of types is really a theory of symbols, not of things. In a proper logical language it would be perfectly obvious. The trouble that there is arises from our inveterate habit of trying to name what cannot be named. If we had a proper logical language, we should not be tempted to do that. Strictly speaking, only particulars can be named. In that sense in which there are particulars,

* [These lectures were given 'in Dr. Williams's library in Gordon Square,' Russell informs me, on eight consecutive Tuesdays. Although University College London, stands nearby, this was probably the only lecture audience in Gordon Square proper.—R.C.M.]

you cannot say either truly or falsely that there is anything else. The word 'there is' is a word having 'systematic ambiguity', i.e., having a strictly infinite number of different meanings which it is important to distinguish.

*Discussion*

*Question*: Could you lump all those classes, and classes of classes, and so on, together?

*Mr. Russell*: All are fictions, but they are different fictions in each case. When you say 'There are classes of particulars', the statement 'there are' wants expanding and explaining away, and when you have put down what you really do mean, or ought to mean, you will find that it is something quite different from what you thought. That process of expanding and writing down fully what you mean, will be different if you go on to 'there are classes of classes of particulars'. There are infinite numbers of meanings to 'there are'. The first only is fundamental, so far as the hierarchy of classes is concerned.

*Question*: I was wondering whether it was rather analogous to spaces, where the first three dimensions are actual, and the higher ones are merely symbolic. I see there is a difference, there are higher dimensions, but you can lump those together.

*Mr. Russell*: There is only one fundamental one, which is the first one, the one about particulars, but when you have gone to classes, you have travelled already just as much away from what there is as if you have gone to classes of classes. There are no classes really in the physical world. The particulars are there, but not classes. If you say 'There is a universe' that meaning of 'there is' will be quite different from the meaning in which you say 'There is a particular', which means that 'the propositional function "$x$ is a particular" is sometimes true'.

All those statements are about symbols. They are never about the things themselves, and they have to do with 'types.' This is really important and I ought not to have forgotten to say it, that the relation of the symbol to what it means is different in different types. I am not now talking about this hierarchy of classes and so on, but the relation of a predicate to what it means is different from the relation of a name to what it means. There is not one single concept of 'meaning' as one ordinarily thinks there is, so

that you can say in a uniform sense 'All symbols have meaning', but there are infinite numbers of different ways of meaning, i.e., different sorts of relation of the symbol to the symbolized, which are absolutely distinct. The relation, e.g., of a proposition to a fact, is quite different from the relation of a name to a particular, as you can see from the fact that there are two propositions always related to one given fact, and that is not so with names. That shows you that the relation that the proposition has to the fact is quite different from the relation of a name to a particular. You must not suppose that there is, over and above that, another way in which you could get at facts by naming them. You can always only get at the thing you are aiming at by the proper sort of symbol, which approaches it in the appropriate way. That is the real philosophical truth that is at the bottom of all this theory of types.

# Part VIII

## Excursus into Metaphysics : What There Is

I come now to the last lecture of this course, and I propose briefly to point to a few of the morals that are to be gathered from what has gone before, in the way of suggesting the bearing of the doctrines that I have been advocating upon various problems of metaphysics. I have dealt hitherto upon what one may call philosophical grammar, and I am afraid I have had to take you through a good many very dry and dusty regions in the course of that investigation, but I think the importance of philosophical grammar is very much greater than it is generally thought to be. I think that practically all traditional metaphysics is filled with mistakes due to bad grammar, and that almost all the traditional problems of metaphysics and traditional results—supposed results—of metaphysics are due to a failure to make the kind of distinctions in what we may call philosophical grammar with which we have been concerned in these previous lectures.

Take, as a very simple example, the philosophy of arithmetic. If you think that 1, 2, 3, and 4, and the rest of the numbers, are in any sense entities, if you think that there are objects, having those names, in the realm of being, you have at once a very considerable apparatus for your metaphysics to deal with, and you have offered to you a certain kind of analysis of arithmetical propositions. When you say, e.g., that 2 and 2 are 4, you suppose in that case that you are making a proposition of which the number 2 and the number 4 are constituents, and that has all sorts of consequences, all sorts of bearings upon your general metaphysical outlook. If there has been any truth in the doctrines that we have been considering, all numbers are what I call logical fictions. Numbers are classes of classes, and classes are logical fictions, so that numbers are, as it were, fictions at two removes, fictions of fictions. Therefore you do not have, as part of the ultimate constituents of your world, these queer entities that you are inclined to call numbers. The same applies in many other directions.

One purpose that has run through all that I have said, has been the justification of analysis, i.e., the justification of logical atomism, of the view that you can get down in theory, if not in practice, to ultimate simples, out of which the world is built, and that those simples have a kind of reality not belonging to anything else. Simples, as I tried to explain, are of an infinite number of sorts. There are particulars and qualities and relations of various orders, a whole hierarchy of different sorts of simples, but all of them, if we were right, have in their various ways some kind of reality that does not belong to anything else. The only other sort of object

you come across in the world is what we call *facts*, and facts are the sort of things that are asserted or denied by propositions, and are not properly entities at all in the same sense in which their constituents are. That is shown in the fact that you cannot name them. You can only deny, or assert, or consider them, but you cannot name them because they are not there to be named, although in another sense it is true that you cannot know the world unless you know the facts that make up the truths of the world; but the knowing of facts is a different sort of thing from the knowing of simples.

Another purpose which runs through all that I have been saying is the purpose embodied in the maxim called Occam's Razor. That maxim comes in, in practice, in this way: take some science, say physics. You have there a given body of doctrine, a set of propositions expressed in symbols—I am including words among symbols —and you think that you have reason to believe that on the whole those propositions, rightly interpreted, are fairly true, but you do not know what is the actual meaning of the symbols that you are using. The meaning they have *in use* would have to be explained in some pragmatic way: they have a certain kind of practical or emotional significance to you which is a datum, but the logical significance is not a datum, but a thing to be sought, and you go through, if you are analysing a science like physics, these propositions with a view to finding out what is the smallest empirical apparatus—or the smallest apparatus, not necessarily wholly empirical—out of which you can build up these propositions. What is the smallest number of simple undefined things at the start, and the smallest number of undemonstrated premises, out of which you can define the things that need to be defined and prove the things that need to be proved? That problem, in any case that you like to take, is by no means a simple one, but on the contrary an extremely difficult one. It is one which requires a very great amount of logical technique; and the sort of thing that I have been talking about in these lectures is the preliminaries and first steps in that logical technique. You cannot possibly get at the solution of such a problem as I am talking about if you go at it in a straightforward fashion with just the ordinary acumen that one accumulates in the course of reading or in the study of traditional philosophy. You do need this apparatus of symbolical logic that I have been talking about. (The description of the subject as symbolical logic is an inadequate one. I should like to describe it simply as logic, on the ground that nothing else really is logic, but that would sound so arrogant that I hesitate to do so.)

Let us consider further the example of physics for a moment. You find, if you read the works of physicists, that they reduce matter down to certain elements—atoms, ions, corpuscles, or what not. But in any case the sort of thing that you are aiming at in the physical analysis of matter is to get down to very little bits of matter that still are just like matter in the fact that they persist through time, and that they travel about in space. They have in fact all the ordinary everyday properties of physical matter, not the matter that one has in ordinary life—they do not taste or smell or appear to the naked eye—but they have the properties that you very soon get to when you travel toward physics from ordinary life. Things of that sort, I say, are not the ultimate consituents of matter in any metaphysical sense. Those things are all of them, as I think a very little reflection shows, logical fictions in the sense that I was speaking of. At least, when I say they are, I speak somewhat too dogmatically. It is possible that there may be all these things that the physicist talks about in actual reality, but it is impossible that we should ever have any reason whatsoever for supposing that there are. That is the situation that you arrive at generally in such analyses. You find that a certain thing which has been set up as a metaphysical entity can either be assumed dogmatically to be real, and then you will have no possible argument either for its reality or against its reality; or, instead of doing that, you can construct a logical fiction having the same formal properties, or rather having formally analogous formal properties to those of the supposed metaphysical entity and itself composed of empirically given things, and that logical fiction can be substituted for your supposed metaphysical entity and will fulfil all the scientific purposes that anybody can desire. With atoms and the rest it is so, with all the metaphysical entities whether of science or of metaphysics. By metaphysical entities I mean those things which are supposed to be part of the ultimate constituents of the world, but not to be the kind of thing that is ever empirically given—I do not say merely not being itself empirically given, but not being the *kind* of thing that is empirically given. In the case of matter, you can start from what is empirically given, what one sees and hears and smells and so forth, all the ordinary data of sense, or you can start with some definite ordinary object, say this desk, and you can ask yourselves, 'What do I mean by saying that this desk that I am looking at now is the same as the one I was looking at a week ago?' The first simple ordinary answer would be that it *is* the same desk, it is actually identical, there is a perfect identity of substance, or whatever you like to call it. But when that apparently simple answer is suggested,

it is important to observe that you cannot have an empirical reason for such a view as that, and if you hold it, you hold it simply because you like it and for no other reason whatever. All that you really know is such facts as that what you see now, when you look at the desk, bears a very close similarity to what you saw a week ago when you looked at it. Rather more than that one fact of similarity I admit you know, or you may know. You might have paid some one to watch the desk continuously throughout the week, and might then have discovered that it was presenting appearances of the same sort all through that period, assuming that the light was kept on all through the night. In that way you could have established continuity. You have not in fact done so. You do not in fact know that that desk has gone on looking the same all the time, but we will assume that. Now the essential point is this: What is the empirical reason that makes you call a number of appearances, appearances of the same desk? What makes you say on successive occasions, I am seeing the same desk? The first thing to notice is this, that it does not matter what is the answer, so long as you have realized that the answer consists in something empirical and not in a recognized metaphysical identity of substance. There is something given in experience which makes you call it the same desk, and having once grasped that fact, you can go on and say, it is that something (whatever it is) that makes you call it the same desk which shall be *defined* as *constituting* it the same desk, and there shall be no assumption of a metaphysical substance which is identical throughout. It is a little easier to the untrained mind to conceive of an identity than it is to conceive of a system of correlated particulars, hung one to another by relations of similarity and continuous change and so on. That idea is apparently more complicated, but that is what is empirically given in the real world, and substance, in the sense of something which is continuously identical in the same desk, is not given to you. Therefore in all cases where you seem to have a continuous entity persisting through changes, what you have to do is to ask yourself what makes you consider the successive appearances as belonging to one thing. When you have found out what makes you take the view that they belong to the same thing, you will then see that that which has made you say so, is all that is *certainly* there in the way of unity. Anything that there may be over and above that, I shall recognize as something I cannot know. What I can know is that there are a certain series of appearances linked together, and the series of those appearances I shall define as being a desk. In that way the

desk is reduced to being a logical fiction, because a series is a logical fiction. In that way all the ordinary objects of daily life are extruded from the world of what there is, and in their place as what there is you find a number of passing particulars of the kind that one is immediately conscious of in sense. I want to make clear that I am not *denying* the existence of anything; I am only refusing to affirm it. I refuse to affirm the existence of anything for which there is no evidence, but I equally refuse to deny the existence of anything against which there is no evidence. Therefore I neither affirm nor deny it, but merely say, that is not in the realm of the knowable and is certainly not a part of physics; and physics, if it is to be interpreted, must be interpreted in terms of the sort of thing that can be empirical. If your atom is going to serve purposes in physics, as it undoubtedly does, your atom has got to turn out to be a construction, and your atom will in fact turn out to be a series of classes of particulars. The same process which one applies to physics, one will also apply elsewhere. The application to physics I explained briefly in my book on the *External World*, Chapters III and IV.

I have talked so far about the unreality of the things we think real. I want to speak with equal emphasis about the reality of things we think unreal, such as phantoms and hallucinations. Phantoms and hallucinations, considered in themselves, are, as I explained in the preceding lectures, on exactly the same level as ordinary sense-data. They differ from ordinary sense-data only in the fact that they do not have the usual correlations with other things. In themselves they have the same reality as ordinary sense-data. They have the most complete and absolute and perfect reality that anything can have. They are part of the ultimate constituents of the world, just as the fleeting sense-data are. Speaking of the fleeting sense-data, I think it is very important to remove out of one's instincts any disposition to believe that the real is the permanent. There has been a metaphysical prejudice always that if a thing is really real, it has to last either forever or for a fairly decent length of time. That is to my mind an entire mistake. The things that are really real last a very short time. Again I am not denying that there *may* be things that last forever, or for thousands of years; I only say that those are not within our experience, and that the real things that we know by experience last for a very short time, one tenth or half a second, or whatever it may be. Phantoms and hallucinations are among those, among the ultimate constituents of the world. The things that we call real, like tables and chairs, are systems, series of classes of particulars, and the

particulars are the real things, the particulars being sense-data when they happen to be given to you. A table or chair will be a series of classes of particulars, and therefore a logical fiction. Those particulars will be on the same level of reality as a hallucination or a phantom. I ought to explain in what sense a chair is a series of classes. A chair presents at each moment a number of different appearances. All the appearances that it is presenting at a given moment make up a certain class. All those sets of appearances vary from time to time. If I take a chair and smash it, it will present a whole set of different appearances from what it did before, and without going as far as that, it will always be changing as the light changes, and so on. So you get a series in time of different sets of appearances, and that is what I mean by saying that a chair is a series of classes. That explanation is too crude, but I leave out the niceties, as that is not the actual topic I am dealing with. Now each single particular which is part of this whole system is linked up with the others in the system. Supposing, e.g., I take as my particular the appearance which that chair is presenting to me at this moment. That is linked up first of all with the appearance which the same chair is presenting to any one of you at the same moment, and with the appearance which it is going to present to me at later moments. There you get at once two journeys that you can take away from that particular, and that particular will be correlated in certain definite ways with the other particulars which also belong to that chair. That is what you mean by saying—or what you ought to mean by saying—that what I see before me is a real thing as opposed to a phantom. It means that it has a whole set of correlations of different kinds. It means that that particular, which is the appearance of the chair to me at this moment, is not isolated but is connected in a certain well-known familiar fashion with others, in the sort of way that makes it answer one's expectations. And so, when you go and buy a chair, you buy not only the appearance which it presents to you at that moment, but also those other appearances that it is going to present when it gets home. If it were a phantom chair, it would not present any appearances when it got home, and would not be the sort of thing you would want to buy. The sort one calls real is one of a whole correlated system, whereas the sort you call hallucinations are not. The respectable particulars in the world are all of them linked up with other particulars in respectable, conventional ways. Then sometimes you get a wild particular, like a merely visual chair that you cannot sit on, and say it is a phantom, a hallucination, you exhaust all the vocabulary of abuse upon it. That is what one

means by calling it unreal, because 'unreal' applied in that way is a term of abuse and never would be applied to a thing that *was* unreal because you would not be so angry with it.

I will pass on to some other illustrations. Take a person. What is it that makes you say, when you meet your friend Jones, 'Why, this is Jones'? It is clearly not the persistence of a metaphysical entity inside Jones somewhere, because even if there be such an entity, it certainly is not what you see when you see Jones coming along the street; it certainly is something that you are not acquainted with, not an empirical datum. Therefore plainly there is something in the empirical appearances which he presents to you, something in their relations one to another, which enables you to collect all these together and say, 'These are what I call the appearances of one person', and that something that makes you collect them together is not the persistence of a metaphysical subject, because that, whether there be such a persistent subject or not, is certainly not a datum, and that which makes you say 'Why, it is Jones' is a datum. Therefore Jones is not constituted as he is known by a sort of pin-point ego that is underlying his appearances, and you have got to find some correlations among the appearances which are of the sort that make you put all those appearances together and say, they are the appearances of one person. Those are different when it is other people and when it is yourself. When it is yourself, you have more to go by. You have not only what you look like, you have also your thoughts and memories and all your organic sensations, so that you have a much richer material and are therefore much less likely to be mistaken as to your own identity than as to some one else's. It happens, of course, that there are mistakes even as to one's own identity, in cases of multiple personality and so forth, but as a rule you will know that it is you because you have more to go by than other people have, and you would know it is you, not by a consciousness of the ego at all but by all sorts of things, by memory, by the way you feel and the way you look and a host of things. But all those are empirical data, and those enable you to say that the person to whom something happened yesterday was yourself. So you can collect a whole set of experiences into one string as all belonging to you, and similarly other people's experiences can be collected together as all belonging to them by relations that actually are observable and without assuming the

existence of the persistent ego. It does not matter in the least to what we are concerned with, what exactly is the given empirical relation between two experiences that makes us say, 'These are two experiences of the same person'. It does not matter precisely what that relation is, because the logical formula for the construction of the person is the same whatever that relation may be, and because the mere fact that you can know that two experiences belong to the same person proves that there is such an empirical relation to be ascertained by analysis. Let us call the relation *R*. We shall say that when two experiences have to each other the relation *R*, then they are said to be experiences of the same person. That is a definition of what I mean by 'experiences of the same person'. We proceed here just in the same way as when we are defining numbers. We first define what is meant by saying that two classes 'have the same number', and then define what a number is. The person who has a given experience *x* will be the class of all those experiences which are 'experiences of the same person' as the one who experiences *x*. You can say that two events are co-personal when there is between them a certain relation *R*, namely that relation which makes us say that they are experiences of the same person. You can define the person who has a certain experience as being those experiences that are co-personal with that experience, and it will be better perhaps to take them as a series than as a class, because you want to know which is the beginning of a man's life and which is the end. Therefore we shall say that a person is a certain series of experiences. We shall not deny that there may be a metaphysical ego. We shall merely say that it is a question that does not concern us in any way, because it is a matter about which we know nothing and can know nothing, and therefore it obviously cannot be a thing that comes into science in any way. What we know is this string of experiences that makes up a person, and that is put together by means of certain empirically given relations, such, e.g., as memory.

I will take another illustration, a kind of problem that our method is useful in helping to deal with. You all know the American theory of neutral monism, which derives really from William James and is also suggested in the work of Mach, but in a rather less developed form. The theory of neutral monism maintains that the distinction between the mental and the physical is entirely an

affair of arrangement, that the actual material arranged is exactly the same in the case of the mental as it is in the case of the physical, but they differ merely in the fact that when you take a thing as belonging in the same context with certain other things, it will belong to psychology, while when you take it in a certain other context with other things, it will belong to physics, and the difference is as to what you consider to be its context, just the same sort of difference as there is between arranging the people in London alphabetically or geographically. So, according to William James, the actual material of the world can be arranged in two different ways, one of which gives you physics and the other psychology. It is just like rows or columns: in an arrangement of rows and columns, you can take an item as either a member of a certain row or a member of a certain column; the item is the same in the two cases, but its context is different.

If you will allow me a little undue simplicity I can go on to say rather more about neutral monism, but you must understand that I am talking more simply than I ought to do because there is not time to put in all the shadings and qualifications. I was talking a moment ago about the appearances that a chair presents. If we take any one of these chairs, we can all look at it, and it presents a different appearance to each of us. Taken all together, taking all the different appearances that that chair is presenting to all of us at this moment, you get something that belongs to physics. So that, if one takes sense-data and arranges together all those sense-data that appear to different people at a given moment and are such as we should ordinarily say are appearances of the same physical object, then that class of sense-data will give you something that belongs to physics, namely, the chair at this moment. On the other hand, if instead of taking all the appearances that that chair presents to all of us at this moment, I take all the appearances that the different chairs in this room present to me at this moment, I get quite another group of particulars. All the different appearances that different chairs present to me now will give you something belonging to psychology, because that will give you my experiences at the present moment. Broadly speaking, according to what one may take as an expansion of William James, that should be the definition of the difference between physics and psychology.

We commonly assume that there is a phenomenon which we call

seeing the chair, but what I call my seeing the chair according to neutral monism is merely the existence of a certain particular, namely the particular which is the sense-datum of that chair at that moment. And I and the chair are both logical fictions, both being in fact a series of classes of particulars, of which one will be that particular which we call my seeing the chair. That actual appearance that the chair is presenting to me now is a member of me and a member of the chair, I and the chair being logical fictions. That will be at any rate a view that you can consider if you are engaged in vindicating neutral monism. There is no simple entity that you can point to and say: this entity is physical and not mental. According to William James and neutral monists that will not be the case with any simple entity that you may take. Any such entity will be a member of physical series and a member of mental series. Now I want to say that if you wish to test such a theory as that of neutral monism, if you wish to discover whether it is true or false, you cannot hope to get any distance with your problem unless you have at your fingers' ends the theory of logic that I have been talking of. You never can tell otherwise what can be done with a given material, whether you can concoct out of a given material the sort of logical fictions that will have the properties you want in psychology and in physics. That sort of thing is by no means easy to decide. You can only decide it if you really have a very considerable technical facility in these matters. Having said that, I ought to proceed to tell you that I have discovered whether neutral monism is true or not, because otherwise you may not believe that logic is any use in the matter. But I do not profess to know whether it is true or not. I feel more and more inclined to think that it may be true. I feel more and more that the difficulties that occur in regard to it are all of the sort that may be solved by ingenuity. But nevertheless there *are* a number of difficulties; there are a number of problems, some of which I have spoken about in the course of these lectures. One is the question of belief and the other sorts of facts involving two verbs. If there are such facts as this, that, I think, may make neutral monism rather difficult, but as I was pointing out, there is the theory that one calls behaviourism, which belongs logically with neutral monism, and that theory would altogether dispense with those facts containing two verbs, and would therefore dispose of that argument against

neutral monism. There is, on the other hand, the argument from emphatic particulars, such as 'this' and 'now' and 'here' and such words as that, which are not very easy to reconcile, to my mind, with the view which does not distinguish between a particular and experiencing that particular. But the argument about emphatic particulars is so delicate and so subtle that I cannot feel quite sure whether it is a valid one or not, and I think the longer one pursues philosophy, the more conscious one becomes how extremely often one has been taken in by fallacies, and the less willing one is to be quite sure that an argument is valid if there is anything about it that is at all subtle or elusive, at all difficult to grasp. That makes me a little cautious and doubtful about all these arguments, and therefore although I am quite sure that the question of the truth or falsehood of neutral monism is not to be solved except by these means, yet I do not profess to know whether neutral monism is true or is not. I am not without hopes of finding out in the course of time, but I do not profess to know yet.

As I said earlier in this lecture, one thing that our techinique does, is to give us a means of constructing a given body of symbolic propositions with the minimum of apparatus, and every diminution in apparatus diminishes the risk of error. Suppose, e.g., that you have constructed your physics with a certain number of entities and a certain number of premises; suppose you discover that by a little ingenuity you can dispense with half of those entities and half of those premises, you clearly have diminished the risk of error, because if you had before 10 entities and 10 premisses, then the 5 you have now would be all right, but it is not true conversely that if the 5 you have now are all right, the 10 must have been. Therefore you diminish the risk of error with every diminution of entities and premisses. When I spoke about the desk and said I was not going to assume the existence of a persistent substance underlying its appearances, it is an example of the case in point. You have anyhow the successive appearances, and if you can get on without assuming the metaphysical and constant desk, you have a smaller risk of error than you had before. You would not necessarily have a smaller risk of error if you were tied down to *denying* the metaphysical desk. That is the advantage of Occam's Razor, that it diminishes your risk of error. Considered in that way you may say that the whole of our problem belongs rather to

science than to philosophy. I think perhaps that is true, but I believe the only difference between science and philosophy is, that science is what you more or less know and philosophy is what you do not know. Philosophy is that part of science which at present people choose to have opinions about, but which they have no knowledge about. Therefore every advance in knowledge robs philosophy of some problems which formerly it had, and if there is any truth, if there is any value in the kind of procedure of mathematical logic, it will follow that a number of problems which had belonged to philosophy will have ceased to belong to philosophy and will belong to science. And of course the moment they become soluble, they become to a large class of philosophical minds uninteresting, because to many of the people who like philosophy, the charm of it consists in the speculative freedom, in the fact that you can play with hypotheses. You can think out this or that which *may* be true, which is a very valuable exercise until you discover what *is* true; but when you discover what is true the whole fruitful play of fancy in that region is curtailed, and you will abandon that region and pass on. Just as there are families in America who from the time of the Pilgrim Fathers onward had always migrated westward, toward the backwoods, because they did not like civilized life, so the philosopher has an adventurous disposition and likes to dwell in the region where there are still uncertainties. It is true that the transferring of a region from philosophy into science will make it distasteful to a very important and useful type of mind. I think that is true of a good deal of the applications of mathematical logic in the directions that I have been indicating. It makes it dry, precise, methodical, and in that way robs it of a certain quality that it had when you could play with it more freely. I do not feel that it is my place to apologize for that, because if it is true, it is true. If it is not true, of course, I do owe you an apology; but if it is, it is not my fault, and therefore I do not feel I owe any apology for any sort of dryness or dulness in the world. I would say this too, that for those who have any taste for mathematics, for those who like symbolic constructions, that sort of world is a very delightful one, and if you do not find it otherwise attractive, all that is necessary to do is to acquire a taste for mathematics, and then you will have a very agreeable world, and with that conclusion I will bring this course of lectures to an end.